UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

FORM 10-Q

(Mark One)

[X] QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the quarterly period ended March 31, 2019

OR

[ ] TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the transition period from ____________ to ____________

Commission file number: 001-15911

CELSION CORPORATION
(Exact name of Registrant as specified in its charter)

Delaware	**52-1256615**
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification Number)

997 Lenox Drive, Suite 100,
Lawrenceville, **NJ 08648**
(Address of principal executive offices)

(609) 896-9100
(Registrant's telephone number, including area code)

NA
(Former name, former address and former fiscal year, if changed since last report)

Indicate by check mark whether the Registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports) and (2) has been subject to such filing requirements for the past 90 days.
Yes [X] No [ ]

Indicate by check mark whether the Registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the Registrant was required to submit such files).
Yes [X] No [ ]

Indicate by check mark whether the Registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer", "smaller reporting company" and "emerging growth company" in Rule 12b-2 of the Exchange Act (Check One):

Large accelerated filer [ ]
Non-accelerated filer [ ]
Accelerated filer [ ]
Smaller reporting company [X]

Emerging growth company [ ]

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. [ ]

Indicate by check mark whether the Registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes [ ] No [X]

Securities registered pursuant to Section 12(b) of the Act

Title of each class	Trading symbol(s)	Name of each exchange on which registered
Common stock, par value $0.01 per share	CLSN	NASDAQ Capital Market

As of May 14, 2019, the Registrant had 20,482,720 shares of common stock, $0.01 par value per share, outstanding.

CELSION CORPORATION
QUARTERLY REPORT ON
FORM 10-Q

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Forward-Looking Statements

This report includes “forward-looking statements” within the meaning of Section 27A of the Securities Act of 1933, as amended and Section 21E of the Securities Exchange Act of 1934, as amended. All statements other than statements of historical fact are “forward-looking statements” for purposes of this Quarterly Report on Form 10-Q, including, without limitation, any projections of earnings, revenue or other financial items, any statements of the plans and objectives of management for future operations (including, but not limited to, pre-clinical development, clinical trials, manufacturing and commercialization), any statements concerning proposed drug candidates, potential therapeutic benefits, or other new products or services, any statements regarding future economic conditions or performance, any changes in the course of research and development activities and in clinical trials, any possible changes in cost and timing of development and testing, capital structure, financial condition, working capital needs and other financial items, any changes in approaches to medical treatment, any introduction of new products by others, any possible licenses or acquisitions of other technologies, assets or businesses, our ability to realize the full extent of the anticipated benefits of our acquisition of the assets of EGEN, Inc., including achieving operational cost savings and synergies in light of any delays we may encounter in the integration process and additional unforeseen expenses, any possible actions by customers, suppliers, partners, competitors and regulatory authorities, compliance with listing standards of The NASDAQ Capital Market and any statements of assumptions underlying any of the foregoing. In some cases, forward-looking statements can be identified by the use of terminology such as “may,” “will,” “expects,” “plans,” “anticipates,” “estimates,” “potential” or “continue,” or the negative thereof or other comparable terminology. Although we believe that our expectations are based on reasonable assumptions within the bounds of our knowledge of our industry, business and operations, we cannot guarantee that actual results will not differ materially from our expectations.

Our future financial condition and results of operations, as well as any forward-looking statements, are subject to inherent risks and uncertainties, including, but not limited to, the risk factors set forth in Part II, Item 1A “Risk Factors” below and for the reasons described elsewhere in this Quarterly Report on Form 10-Q. All forward-looking statements and reasons why results may differ included in this report are made as of the date hereof and we do not intend to update any forward-looking statements, except as required by law or applicable regulations. The discussion of risks and uncertainties set forth in this Quarterly Report on Form 10-Q is not necessarily a complete or exhaustive list of all risks facing us at any particular point in time. We operate in a highly competitive, highly regulated and rapidly changing environment and our business is in a state of evolution. Therefore, it is likely that new risks will emerge, and that the nature and elements of existing risks will change, over time. It is not possible for management to predict all such risk factors or changes therein, or to assess either the impact of all such risk factors on our business or the extent to which any individual risk factor, combination of factors, or new or altered factors, may cause results to differ materially from those contained in any forward-looking statement.

Except where the context otherwise requires, in this Quarterly Report on Form 10-Q, the “Company,” “Celsion,” “we,” “us,” and “our” refer to Celsion Corporation, a Delaware corporation and its wholly-owned subsidiary CLSN Laboratories, Inc., also a Delaware corporation.

Trademarks

The Celsion brand and product names, including but not limited to Celsion® and ThermoDox® contained in this document are trademarks, registered trademarks or service marks of Celsion Corporation or its subsidiary in the United States (“U.S.”) and certain other countries. This document also contains references to trademarks and service marks of other companies that are the property of their respective owners.

PART I: FINANCIAL INFORMATION

Item 1. FINANCIAL STATEMENTS

CELSION CORPORATION

CONDENSED CONSOLIDATED BALANCE SHEETS

	March 31, 2019 (Unaudited)	December 31, 2018
ASSETS		
Current assets:		
Cash and cash equivalents	$ 3,575,590	$ 13,353,543
Investment securities - available for sale, at fair value	20,166,768	14,257,998
Accrued interest receivable on investment securities	78,070	68,309
Advances and deposits on clinical programs and other current assets	1,040,600	451,293
Total current assets	24,861,028	28,131,143
Property and equipment (at cost, less accumulated depreciation and amortization of $2,998,600 and $2,968,259, respectively)	299,448	184,627
Other assets:		
In-process research and development, net	15,736,491	15,736,491
Goodwill	1,976,101	1,976,101
Other intangible assets, net	511,463	568,292
Operating lease right-of-use assets, net	1,695,931	—
Deposits and other assets	315,490	258,933
Total other assets	20,235,476	18,539,817
Total assets	$ 45,395,952	$ 46,855,587

See accompanying notes to the condensed consolidated financial statements.

CELSION CORPORATION

CONDENSED CONSOLIDATED BALANCE SHEETS (Continued)

	March 31, 2019 (Unaudited)	December 31, 2018
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable ─ trade	$ 2,585,591	$ 3,020,638
Other accrued liabilities	2,462,965	2,585,898
Operating lease liability – current portion	344,721	─
Deferred revenue - current portion	500,000	500,000
Total current liabilities	5,893,277	6,106,536
Earn-out milestone liability	5,777,664	8,907,664
Note Payable, net of deferred financing costs	9,514,495	9,417,037
Operating lease liability – non-current portion	1,438,914	─
Deferred revenue - non-current portion	1,375,000	1,500,000
Other liabilities - non-current	─	63,278
Total liabilities	23,999,350	25,994,515
Commitments and contingencies	─	─
Stockholders' equity:		
Preferred Stock - $0.01 par value (100,000 shares authorized, and no shares issued or outstanding at March 31, 2019 and December 31, 2018)	─	─
Common stock - $0.01 par value (112,500,000 shares authorized; 19,662,354 and 18,832,168 shares issued at March 31, 2019 and December 31, 2018, respectively, and 19,662,020 and 18,831,834 shares outstanding at March 31, 2019 and December 31, 2018, respectively)	196,624	188,322
Additional paid-in capital	297,231,041	294,393,313
Accumulated other comprehensive gain	86,824	29,872
Accumulated deficit	(276,032,699)	(273,665,247)
Total stockholders' equity before treasury stock	21,481,790	20,946,260
Treasury stock, at cost (334 shares March 31, 2019 and December 31, 2018)	(85,188)	(85,188)
Total stockholders' equity	21,396,602	20,861,072
Total liabilities and stockholders' equity	$ 45,395,952	$ 46,855,587

See accompanying notes to the condensed consolidated financial statements.

CELSION CORPORATION

CONDENSED CONSOLIDATED
STATEMENTS OF OPERATIONS
(Unaudited)

	Three Months Ended March 31,	
	2019	**2018**
Technology development and licensing revenue	$ 125,000	$ 125,000
Operating expenses:		
Research and development	2,767,659	2,741,076
General and administrative	2,217,864	1,665,028
Total operating expenses	4,985,523	4,406,104
Loss from operations	(4,860,523)	(4,281,104)
Other income (expense):		
Gain (loss) from change in valuation of earn-out milestone liability	3,130,000	(270,195)
Fair value of warrants issued in connection with amendment to modify GEN-1 earn-out milestone payments	(400,000)	-
Investment income	113,791	73,724
Interest expense	(350,747)	-
Other income	27	580
Total other income (expense), net	2,493,071	(195,891)
Net loss	$ (2,367,452)	$ (4,476,995)
Net loss per common share		
Basic and diluted	$ (0.12)	$ (0.25)
Weighted average shares outstanding		
Basic and diluted	19,104,785	17,683,847

See accompanying notes to the condensed consolidated financial statements.

CELSION CORPORATION

CONDENSED CONSOLIDATED
STATEMENTS OF COMPREHENSIVE LOSS
(Unaudited)

	Three Months Ended March 31,	
	2019	**2018**
Other comprehensive (loss) gain		
Changes in:		
Reclassification of realized gain on investment securities recognized in investment income, net	$ (9,381)	$ -
Unrealized gain (loss) on investment securities	66,333	(23,250)
Change in unrealized gain on available for sale securities	56,952	(23,250)
Net loss	(2,367,452)	(4,476,995)
Comprehensive loss	$ (2,310,500)	$ (4,500,245)

See accompanying notes to the condensed consolidated financial statements.

CELSION CORPORATION

CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS (Unaudited)

	Three Months Ended March 31	
	2019	2018
Cash flows from operating activities:		
Net loss	$ (2,367,452)	$ (4,476,995)
Non-cash items included in net loss:		
Depreciation and amortization	188,806	87,171
Change in fair value of earn-out milestone liability	(3,130,000)	270,195
Fair value of warrants issued in connection with amendment to modify the GEN-1 earn-out milestone payments	400,000	-
Recognition of deferred revenue	(125,000)	(125,000)
Stock-based compensation costs	691,145	153,668
Shares issued in exchange for services	-	15,840
Amortization of deferred finance charges and debt discount associated with notes payable	97,458	-
Change in deferred rent liability	-	(1,478)
Net changes in:		
Accrued interest on investment securities	(9,761)	(12,752)
Advances, deposits and other current assets	(645,864)	-
Accounts payable and accrued liabilities	(635,190)	(565,945)
Net cash (used in) operating activities:	(5,535,858)	(4,655,296)
Cash flows from investing activities:		
Purchases of investment securities	(11,251,818)	(5,710,392)
Proceeds from sale and maturity of investment securities	5,400,000	-
Purchases of property and equipment	(145,162)	(29,637)
Net cash (used in) provided by investing activities	(5,996,980)	(5,740,029)
Cash flows from financing activities:		
Proceeds from sale of common stock equity, net of issuance costs	1,754,885	1,236,584
Net cash provided by financing activities	1,754,885	1,236,584
Decrease increase in cash and cash equivalents	(9,777,953)	(9,158,741)
Cash and cash equivalents at beginning of period	13,353,543	11,444,055
Cash and cash equivalents at end of period	$ 3,575,590	$ 2,285,314
Supplemental disclosures of cash flow information:		
Interest paid	$ 253,289	$ -
Non-cash financing and investing activities		
Fair value of warrants issued in connection with amendment to modify the GEN-1 earn-out milestone payments	$ 400,000	$ -
Realized and unrealized gains and losses, net, on investment securities	$ 56,952	$ (23,250)

See accompanying notes to the condensed consolidated financial statements.

CELSION CORPORATION

CONDENSED CONSOLIDATED
STATEMENTS OF CHANGES IN STOCKHOLDERS EQUITY
(Unaudited)

THREE MONTHS ENDED MARCH 31, 2019

	Common Stock Outstanding		Additional Paid in	Treasury Stock		Accum. Other Compr.	Accumulated	
	Shares	Amount	Capital	Shares	Amount	Income	Deficit	Total
Balance at January 1, 2019	18,831,834	$ 188,322	$ 294,393,313	334	$ (85,188)	$ 29,872	$ (273,665,247)	$ 20,861,072
Net loss	-	-	-	-	-	-	(2,367,452)	(2,367,452)
Sale of equity through equity financing facilities	822,186	8,222	1,746,663	-	-	-	-	1,754,885
Common stock warrants issued in connection with amendment to modify GEN-1 earn-out milestone payments	-	-	400,000	-	-	-	-	400,000
Realized and unrealized gains and losses, net, on investments securities	-	-	-	-	-	56,952	-	56,952
Stock-based compensation expense	-	-	691,145	-	-	-	-	691,145
Issuance of restricted stock	8,000	80	(80)	-	-	-	-	-
Balance at March 31, 2019	19,662,020	$ 196,624	$ 297,231,041	334	$ (85,188)	$ 86,824	$ (276,032,699)	$ 21,396,602

See accompanying notes to the condensed consolidated financial statements.

CELSION CORPORATION

CONDENSED CONSOLIDATED
STATEMENTS OF CHANGES IN STOCKHOLDERS EQUITY (continued)
(Unaudited)

THREE MONTHS ENDED MARCH 31, 2018

	Common Stock Outstanding		Additional Paid in	Treasury Stock		Accum. Other Compr.	Accumulated	
	Shares	**Amount**	**Capital**	**Shares**	**Amount**	**Income**	**Deficit**	**Total**
Balance at January 1, 2018	17,276,965	$172,772	$288,408,976	334	$(85,188)	$(10,164)	$(261,781,888)	$26,704,508
Net loss	-	-	-	-	-	-	(4,476,995)	(4,476,995)
Sale of equity through ATM purchase agreement	457,070	4,571	1,232,013	-	-	-	-	1,236,584
Realized and unrealized gains and losses, net, on investments securities	-	-	-	-	-	(23,250)	-	(23,250)
Stock-based compensation expense	-	-	153,668	-	-	-	-	153,668
Issuance of restricted stock	6,000	60	15,780	-	-	-	-	15,840
Balance at March 31, 2018	17,740,035	$177,403	$289,810,437	334	$(85,188)	$(33,414)	$(266,258,883)	$23,610,355

See accompanying notes to the condensed consolidated financial statements.

FOR THE THREE MONTHS ENDED MARCH 31, 2019 AND 2018

Note 1. Business Description

Celsion Corporation ("Celsion" and the "Company") is a fully-integrated development stage oncology drug company focused on advancing a portfolio of innovative cancer treatments, including directed chemotherapies, DNA-mediated immunotherapy and RNA based therapies. Our lead product candidate is ThermoDox®, a proprietary heat-activated liposomal encapsulation of doxorubicin, currently in a Phase III clinical trial for the treatment of primary liver cancer (the "OPTIMA Study"). Second in our pipeline is GEN-1, a DNA-mediated immunotherapy for the localized treatment of ovarian cancer. We have two platform technologies providing the basis for the future development of a range of therapeutics for difficult-to-treat forms of cancer including: Lysolipid Thermally Sensitive Liposomes, a heat sensitive liposomal based dosage form that targets disease with known therapeutics in the presence of mild heat and TheraPlas, a novel nucleic acid-based treatment for local transfection of therapeutic plasmids. With these technologies we are working to develop and commercialize more efficient, effective and targeted oncology therapies that maximize efficacy while minimizing side-effects common to cancer treatments.

Note 2. Basis of Presentation

The accompanying unaudited condensed consolidated financial statements, which include the accounts of Celsion Corporation and its wholly owned subsidiary CLSN Laboratories, Inc, have been prepared in accordance with generally accepted accounting principles in the United States (GAAP) for interim financial information and with the instructions to Form 10-Q and Article 10 of Regulation S-X. All intercompany balances and transactions have been eliminated in consolidation. Certain information and disclosures normally included in financial statements prepared in accordance with GAAP have been condensed or omitted pursuant to such rules and regulations.

In the opinion of management, all adjustments, consisting only of normal recurring accruals considered necessary for a fair presentation, have been included in the accompanying unaudited condensed consolidated financial statements. Operating results for the three-month period ended March 31, 2019 are not necessarily indicative of the results that may be expected for any other interim period(s) or for any full year. For further information, refer to the financial statements and notes thereto included in the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2018 filed with the Securities and Exchange Commission (SEC) on March 29, 2019.

The preparation of financial statements in conformity with GAAP requires management to make judgments, estimates, and assumptions that affect the amount reported in the Company's financial statements and accompanying notes. Actual results could differ materially from those estimates. Events and conditions arising subsequent to the most recent balance sheet date have been evaluated for their possible impact on the financial statements and accompanying notes. No events and conditions would give rise to any information that required accounting recognition or disclosure in the financial statements other than those arising in the ordinary course of business.

Note 3. Financial Condition and Business Plan

Since inception, the Company has incurred substantial operating losses, principally from expenses associated with the Company's research and development programs, clinical trials conducted in connection with the Company's product candidates, and applications and submissions to the U.S. Food and Drug Administration. We have not generated significant revenue and have incurred significant net losses in each year since our inception. We have incurred approximately $276 million of cumulative net losses. As of March 31, 2019, we had approximately $23.8 million in cash, investment securities and interest receivable. We have substantial future capital requirements to continue our research and development activities and advance our product candidates through various development stages. The Company believes these expenditures are essential for the commercialization of its technologies.

The Company expects its operating losses to continue for the foreseeable future as it continues its product development efforts, and when it undertakes marketing and sales activities. The Company's ability to achieve profitability is dependent upon its ability to obtain governmental approvals, manufacture, and market and sell its new product candidates. There can be no assurance that the Company will be able to commercialize its technology successfully or that profitability will ever be achieved. The operating results of the Company have fluctuated significantly in the past. We have substantial future capital requirements associated with our continued research and development activities and to advance our product candidates through various stages of development. The Company believes these expenditures are essential for the commercialization of its technologies.

The actual amount of funds the Company will need to operate is subject to many factors, some of which are beyond the Company's control. These factors include the following:

- the progress of research activities;
- the number and scope of research programs;
- the progress of preclinical and clinical development activities;
- the progress of the development efforts of parties with whom the Company has entered into research and development agreements;
- the costs associated with additional clinical trials of product candidates;
- the ability to maintain current research and development licensing arrangements and to establish new research and development and licensing arrangements;
- the ability to achieve milestones under licensing arrangements;
- the costs involved in prosecuting and enforcing patent claims and other intellectual property rights; and
- the costs and timing of regulatory approvals.

The Company has based its estimate on assumptions that may prove to be wrong. The Company may need to obtain additional funds sooner or in greater amounts than it currently anticipates. Potential sources of financing include strategic relationships, public or private sales of the Company's shares or debt, the sale of the Company's State of New Jersey net operating losses and other sources. If the Company raises funds by selling additional shares of common stock or other securities convertible into common stock, the ownership interest of existing stockholders may be diluted.

Annually, the State of New Jersey enables approved technology and biotechnology businesses with New Jersey net operating tax losses the opportunity to sell these losses through the Technology Business Tax Certificate Program (the "NOL Program"), thereby providing cash to companies to help fund their operations. The Company determined it met the eligibility requirements of the NOL Program for 2018 and filed its application with the New Jersey Economic Development Authority (NJEDA) in June 2018. In this application, the Company requested authorization of up to $12.5 million in tax benefits from its cumulative New Jersey net operating losses to be eligible for sale. In September 2018, the NJEDA notified the Company that its application received approval under the NOL Program for 2018, and after receiving approval from the NJEDA to transfer $11.1 million of tax benefits in December 2018, the Company successfully transferred these approved tax benefits which resulted in receipt of $10.4 million in net cash proceeds to the Company at the end of 2018. The Company has approximately $3.9 million in future tax benefits remaining under the NOL Program for future years and it expects to file an application under the NOL Program in June 2019.

With $23.8 million in cash, investment securities and interest receivable at March 31, 2019 coupled with future sales of the Company's New Jersey NOL's, the Company believes it has sufficient capital resources to fund its operations into the fourth quarter of 2020. The Company will be required to obtain additional funding to continue development of its current product candidates within the anticipated time periods, if at all, and to continue to fund operations. As more fully discussed in Note 11, the Company has approximately $28.6 million available collectively for future sale of equity securities under a common stock purchase agreement with Aspire Capital Fund, LLC and a common stock sales agreement with JonesTrading Institutional Services LLC as of March 31, 2019.

Note 4. New Accounting Pronouncements

From time to time, new accounting pronouncements are issued by Financial Accounting Standards Board (FASB) and are adopted by us as of the specified effective date. Unless otherwise discussed, we believe that the impact of recently issued accounting pronouncements will not have a material impact on the Company's consolidated financial position, results of operations, and cash flows, or do not apply to our operations.

In February 2016, the FASB issued Accounting Standards Update No. 2016-02, "Leases" - Topic 842 (ASC Topic 842), which requires that lessees recognize assets and liabilities for leases with lease terms greater than twelve months in the statement of financial position. Leases will be classified as either finance or operating, with classification affecting the pattern of expense recognition in the income statement. This update also requires improved disclosures to help users of financial statements better understand the amount, timing and uncertainty of cash flows arising from leases. The update became effective for fiscal years beginning after December 15, 2018, including interim reporting periods within that reporting period. The FASB subsequently issued the following amendments to ASC Topic 842, which have the same effective date and transition date of January 1, 2019:

- ASU No. 2018-10, *Codification Improvements to Topic 842, Leases*, which amends certain narrow aspects of the guidance issued in ASU 2016-02; and

- ASU No. 2018-11, *Leases (Topic 842): Targeted Improvements*, which allows for a transition approach to initially apply ASU 2016-02 at the adoption date and recognize a cumulative-effect adjustment to the opening balance of retained earnings in the period of adoption as well as an additional practical expedient for lessors to not separate non-lease components from the associated lease component.

We adopted Topic ASC 842 effective January 1, 2019 and elected to apply the available practical expedients and implement internal controls to enable the preparation of financial information on adoption. We identified two of our leases consisting of the New Jersey corporate office lease and the Alabama lab facility lease as being subject to Topic ASC 842. The adoption of this standard resulted in the recognition of right-of-use assets of approximately $1.4 million, related operating lease liabilities of $1.5 million and reduced other liabilities by approximately $0.1 million on the consolidated balance sheets as of January 1, 2019 with no material impact to the opening balance of retained earnings. See Note 15 for further discussions regarding the adoption of ASC Topic 842.

In August 2018, the SEC issued a final rule to simplify certain disclosure requirements. In addition, the amendments expanded the disclosure requirements on the analysis of stockholders' equity for interim financial statements. In August and September 2018, further amendments were issued to provide implementation guidance on adoption of the SEC rule and transition guidance for the new interim stockholders' equity disclosure. We adopted this amended guidance in the first quarter of 2019. The adoption of this amended guidance resulted in us disclosing the Condensed Consolidated Statements of Changes in Stockholders' Equity for the three months ending March 31, 2019 and 2018.

In January 2017, the FASB issued Accounting Standard Update No. 2017-01, "Business Combinations (Topic 805): Clarifying the Definition of a Business," which clarifies the definition of a business with the objective of adding guidance to assist entities with evaluating whether transactions should be accounted for as acquisitions (or disposals) of assets or businesses. This guidance is effective for annual reporting periods beginning after December 15, 2018, and interim periods within those years, with early adoption permitted. The adoption of ASU 2017-01 did not have an impact on our financial statement or disclosures.

In January 2017, the FASB issued Accounting Standard Update No. 2017-04, "Intangibles-Goodwill and Other, Simplifying the Test for Goodwill Impairment," which eliminated Step *2* from the goodwill impairment test. Under the revised test, an entity should perform its annual, or interim, goodwill impairment test by comparing the fair value of a reporting unit with its carrying amount. An entity should recognize an impairment charge for the amount by which the carrying amount exceeds the reporting unit's fair value; however, the loss recognized should *not* exceed the total amount of goodwill allocated to that reporting unit. This ASU is effective for any interim or annual impairment tests for fiscal years beginning after December 15, 2019, with early adoption permitted. The Company adopted this method for its impairment testing of goodwill during 2017 and 2018. Based on the Company's evaluation, the adoption of the ASU 2017-04 did not have any material impact on its consolidated financial statements or its disclosures.

Note 5. Net Loss per Common Share

Basic loss per share is calculated based upon the net loss available to common shareholders divided by the weighted average number of common shares outstanding during the period. Diluted loss per share is calculated after adjusting the denominator of the basic earnings per share computation for the effects of all dilutive potential common shares outstanding during the period. The dilutive effects of preferred stock, options and warrants and their equivalents are computed using the treasury stock method.

The total number of shares of common stock issuable upon exercise of warrants, stock option grants and equity awards were 5,412,554 shares for the three-month period ended March 31, 2019. Warrants with an exercise price of $0.01 (as more fully described in Note 13 of these financial statements) exercisable for 200,000 shares of common stock was considered issued in calculating basic loss per share. For the three-month period ended March 31, 2019, diluted loss per common share was the same as basic loss per common share as the other 5,212,554 warrants and equity awards that were convertible into shares of the Company's common stock were excluded from the calculation of diluted loss per common share as their effect would have been anti-dilutive.

The total number of shares of common stock issuable upon exercise of warrants and equity awards was 3,655,643 shares for the three-month period ended March 31, 2018. For the three month period ended March 31, 2018, diluted loss per common share was the same as basic loss per common share as all options and all warrants that were exercisable into shares of the Company's common stock were excluded from the calculation of diluted earnings attributable to common shareholders per common share as their effect would have been anti-dilutive.

The Company did not pay any dividends during the three-month periods ended March 31, 2019 and 2018.

Note 6. Fair Value of Financial Instruments

Short-term investments available for sale were approximately $20.2 million and $14.3 million as of March 31, 2019 and December 31, 2018, respectively, consist of corporate debt securities. These investments are valued at estimated fair value, with unrealized gains and losses reported as a separate component of stockholders' equity in accumulated other comprehensive loss.

Securities available for sale are evaluated periodically to determine whether a decline in their value is other than temporary. The term "other than temporary" is not intended to indicate a permanent decline in value. Rather, it means that the prospects for near term recovery of value are not necessarily favorable, or that there is a lack of evidence to support fair values equal to, or greater than, the carrying value of the security. Management reviews criteria such as the magnitude and duration of the decline, as well as the reasons for the decline, to predict whether the loss in value is other than temporary. Once a decline in value is determined to be other than temporary, the value of the security is reduced and a corresponding charge to earnings is recognized.

A summary of the cost, fair value and maturities of the Company's short-term investments is as follows:

	March 31, 2019		December 31, 2018	
	Cost	**Fair Value**	**Cost**	**Fair Value**
Short-term investments				
Corporate debt securities	$ 20,079,944	$ 20,166,768	$ 14,228,126	$ 14,257,998
Total	$ 20,079,944	$ 20,166,768	$ 14,228,126	$ 14,257,998

	March 31, 2019		December 31, 2018	
	Cost	Fair Value	Cost	Fair Value
Short-term investment maturities				
Within 3 months	$ 6,452,955	$ 6,489,330	$ 5,383,488	$ 5,393,743
Between 3-12 months	13,626,989	13,677,438	8,844,638	8,864,255
Total	$ 20,079,944	$ 20,166,768	$ 14,228,126	$ 14,257,998

The following table shows the Company's investment securities gross unrealized gains (losses) and fair value by investment category and length of time that individual securities have been in a continuous unrealized loss position at March 31, 2019 and December 31, 2018. The Company has reviewed individual securities to determine whether a decline in fair value below the amortizable cost basis is other than temporary.

	March 31, 2019		December 31, 2018	
Available for sale securities (all unrealized holding gains and losses are less than 12 months at date of measurement)	Fair Value	Unrealized Holding Gains (Losses)	Fair Value	Unrealized Holding Gains (Losses)
Investments with unrealized gains	$ 17,855,744	$ 87,311	$ 7,515,676	$ 38,068
Investments with unrealized losses	2,311,024	(487)	6,742,322	(8,196)
Total	$ 20,166,768	$ 86,824	$ 14,257,998	$ 29,872

Investment income, which includes net realized losses on sales of available for sale securities and investment income interest and dividends, is summarized as follows:

	Three Months Ended March 31,	
	2019	2018
Interest and dividends accrued and paid	$ 104,410	$ 69,289
Realized gains	9,381	4,435
Investment income, net	$ 113,791	$ 73,724

Note 7. Fair Value Measurements

FASB Accounting Standards Codification (ASC) Section 820 "Fair Value Measurements and Disclosures," establishes a three-level hierarchy for fair value measurements which requires an entity to maximize the use of observable inputs and minimize the use of unobservable inputs when measuring fair value. The three levels of inputs that may be used to measure fair value are as follows:

> Level 1: Quoted prices (unadjusted) or identical assets or liabilities in active markets that the entity has the ability to access as of the measurement date;
>
> Level 2: Significant other observable inputs other than Level 1 prices such as quoted prices for similar assets or liabilities; quoted prices in markets that are not active; or other inputs that are observable or can be corroborated by observable market data; and
>
> Level 3: Significant unobservable inputs that reflect a reporting entity's own assumptions that market participants would use in pricing an asset or liability.

Cash and cash equivalents, other current assets, accounts payable and other accrued liabilities are reflected in the condensed consolidated balance sheet at their approximate estimated fair values primarily due to their short-term nature. The fair values of securities available for sale is determined by relying on the securities' relationship to other benchmark quoted securities and classified its investments as Level 2 items in both 2019 and 2018. There were no transfers of assets or liabilities between Level 1 and Level 2 and no transfers in or out of Level 3 thus far in 2019 and during the year ended December 31, 2018. The changes in Level 3 liabilities were the result of changes in the fair value of the earn-out milestone liability included in earnings and in-process R&D. The earnout milestone liability is valued using a risk-adjusted assessment of the probability of payment of each milestone, discounted to present value using an estimated time to achieve the milestone (see Note 13 for significant unobservable inputs). The in-process R&D – GBM is valued using a multi-period excess earnings method (see note 8 for significant unobservable inputs).

Assets and liabilities measured at fair value are summarized below:

	Total Fair Value	Quoted Prices in Active Markets for Identical Assets/Liabilities (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Assets:				
Recurring items as of March 31, 2019				
Corporate debt securities, available for sale	$ 20,166,678	$ —	$ 20,166,678	$ —
Recurring items as of December 31, 2018				
Corporate debt securities, available for sale	$ 14,257,998	$ —	$ 14,257,998	$ —
Liabilities:				
Recurring items as of March 31, 2019				
Earn-out milestone liability (Note 13)	$ 5,777,664	$ —	$ —	$ 5,777,664
Recurring items as of December 31, 2018				
Earn-out milestone liability (Note 13)	$ 8,907,664	$ —	$ —	$ 8,907,664

Note 8. Acquisition of EGEN Assets

On June 20, 2014, we completed the acquisition of substantially all of the assets of EGEN, which has changed its company name to EGWU, Inc. after the closing of the acquisition (“EGEN”), pursuant to an Asset Purchase Agreement dated as of June 6, 2014, by and between EGEN and Celsion (the “Asset Purchase Agreement”). We acquired all of EGEN’s right, title and interest in and to substantially all of the assets of EGEN, including cash and cash equivalents, patents, trademarks and other intellectual property rights, clinical data, certain contracts, licenses and permits, equipment, furniture, office equipment, furnishings, supplies and other tangible personal property. In addition, CLSN Laboratories assumed certain specified liabilities of EGEN, including the liabilities arising out of the acquired contracts and other assets relating to periods after the closing date.

At the time of the acquisition, the total purchase price for the asset acquisition was up to $44.4 million, including potential future earnout payments of up to $30.4 million contingent upon achievement of certain earnout milestones set forth in the Asset Purchase Agreement. We paid approximately $3.0 million in cash after the expense adjustment and issued 241,590 shares of our common stock to EGEN. The shares of common stock were issued in a private transaction exempt from registration under the Securities Act, pursuant to Section 4 (2) thereof.

Acquired In-process Research and Development

Acquired in-process research and development (IPR&D) consists of EGEN's drug technology platforms: TheraPlas and TheraSilence. The fair value of the IPR&D drug technology platforms was estimated to be $24.2 million as of the acquisition date. As of the closing of the acquisition, the IPR&D was considered indefinite lived intangible assets and will not be amortized. IPR&D is reviewed for impairment at least annually as of our third quarter ended September 30, and whenever events or changes in circumstances indicate that the carrying value of the assets might not be recoverable. On December 31, 2016, the Company determined one of its IPR&D assets related to its RNA delivery system was impaired and wrote off its fair value, incurring a non-cash charge of $1.4 million during 2016. During its annual assessments on September 30, 2017 and 2018, the Company determined its IPR&D asset related to its glioblastoma multiforme cancer (GBM) product candidate, originally fair valued at $9.4 million on the date of acquisition, was impaired and wrote this asset's carrying value down to $2.4 million collectively after those two assessments, incurring non-cash charges of $2.5 million and $4.5 million during 2017 and 2018, respectively. On September 30, 2018 and 2017, the Company evaluated its IPR&D of the ovarian cancer indication and concluded that it is not more likely than not that the asset is impaired. As no other indicators of impairment existed during the fourth quarter of 2018 and thus far in 2019, the Company concluded none of the other IPR&D assets were impaired at December 31, 2018 and March 31, 2019. The carrying amount of the ovarian cancer indication was $13.3 million at March 31, 2019.

Covenants Not To Compete

Pursuant to the EGEN Purchase Agreement, EGEN provided certain covenants ("Covenant Not To Compete") to the Company whereby EGEN agreed, during the period ending on the seventh anniversary of the closing date of the acquisition on June 20, 2014, not to enter into any business, directly or indirectly, which competes with the business of the Company nor will it contact, solicit or approach any of the employees of the Company for purposes of offering employment. The Covenant Not to Compete, which was valued at approximately $1.6 million at the date of the EGEN asset acquisition, has a definitive life and is amortized on a straight-line basis over its life of 7 years. The Company recognized amortization expense of $56,829 in each of the three-month periods ended March 31, 2019 and 2018. The carrying value of the Covenant Not to Compete was $511,463, net of $1,079,751, as of March 31, 2019 and $568,292, net of $1,022,922 accumulated amortization, as of December 31, 2018.

Following is a schedule of future amortization amounts during the remaining life of the Covenant Not to Compete.

	Year Ended March 31,
2020	$ 227,316
2021	227,316
2022	56,831
Total	$ 511,463

Goodwill

The purchase price exceeded the estimated fair value of the net assets acquired by approximately $2.0 million which was recorded as Goodwill. Goodwill represents the difference between the total purchase price for the net assets purchased from EGEN and the aggregate fair values of tangible and intangible assets acquired, less liabilities assumed. Goodwill is reviewed for impairment at least annually as of our third quarter ended September 30 or sooner if we believe indicators of impairment exist. As of September 30, 2018, we concluded that the Company's fair value exceeded its carrying value therefore "it is not more likely than not" that the Goodwill was impaired. As no other indicators of impairment existed during the fourth quarter of 2018 and thus far in 2019, the Company concluded it is "not more likely than not" Goodwill was impaired.

Following is a summary of the net fair value of the assets acquired in the EGEN asset acquisition for the three-month periods ended March 31, 2019 and 2018:

		IPR&D	Goodwill	Covenant Not To Compete
For the three months ended March 31, 2019				
Balance at January 1, 2019, net	$	15,736,491	1,976,101	568,292
Amortization		-	-	(56,829)
Balance at March 31, 2019, net		15,736,491	1,976,101	511,463
For the three months ended March 31, 2018				
Balance at January 1, 2018, net	$	20,246,491	1,976,101	795,608
Amortization		-	-	(56,829)
Balance at March 31, 2018, net		20,246,491	1,976,101	738,779

Note 9. Accrued Liabilities

Other accrued liabilities at March 31, 2019 and December 31, 2018 include the following:

		March 31, 2019 (Unaudited)		**December 31, 2018**
Amounts due to contract research organizations and other contractual agreements	$	1,316,545	$	749,369
Accrued payroll and related benefits		803,706		1,592,590
Accrued professional fees		323,304		198,654
Other		19,410		45,285
Total	$	2,462,965	$	2,585,898

Note 10. Note Payable

Horizon Credit Agreement

On June 27, 2018, the Company entered into a loan agreement with Horizon Technology Finance Corporation (“Horizon”) that provided $10 million in new capital (the “Horizon Credit Agreement”). The Company drew down $10 million upon closing of the Horizon Credit Agreement on June 27, 2018. The Company will use the funding provided under the Horizon Credit Agreement for working capital and advancement of its product pipeline.

The obligations under the Horizon Credit Agreement are secured by a first-priority security interest in substantially all assets of Celsion other than intellectual property assets. The obligations will bear interest at a rate calculated based on one-month LIBOR plus 7.625%. The effective interest rate at December 31, 2018 was 9.98%. Payments under the loan agreement are interest only for the first twenty-four (24) months after loan closing, followed by a 24-month amortization period of principal and interest through the scheduled maturity date. At its option, the Company can prepay all the outstanding principal balance by prepaying the outstanding principal balance and an amount equal to 1-3% of the outstanding principal balance at that time, based on the amount of time prior to the maturity date of the notes.

The Horizon Credit Agreement contains customary representations, warranties and affirmative and negative covenants including, among other things, covenants that limit or restrict Celsion’s ability to grant liens, incur indebtedness, make certain restricted payments, merge or consolidate and make dispositions of assets. Upon the occurrence of an event of default under the Horizon Credit Agreement, the lenders may cease making loans, terminate the Horizon Credit Agreement, declare all amounts outstanding to be immediately due and payable and foreclose on or liquidate Celsion’s assets that comprise the lenders’ collateral. The Horizon Credit Agreement specifies a number of events of default (some of which are subject to applicable grace or cure periods), including, among other things, non-payment defaults, covenant defaults, a material adverse effect on Celsion or its assets, cross-defaults to other material indebtedness, bankruptcy and insolvency defaults and material judgment defaults.

As a fee in connection with the Horizon Credit Agreement, Celsion issued Horizon warrants exercisable for a total of 190,114 shares of Celsion’s common stock (the “Horizon Warrants”) at a per share exercise price of $2.63. The Horizon Warrants are immediately exercisable for cash or by net exercise from the date of grant and will expire after ten years from the date of grant. Celsion registered the Horizon Warrants on Form S-3 (File No. 333 - 227236) filed with the Securities and Exchange Commission on September 7, 2018 and declared effective on October 10, 2018. The Company valued the Horizon Warrants issued using the Black-Scholes option pricing model and recorded a total of $507,116 as a direct deduction from the debt liability consistent with the presentation of a debt discount and are being amortized as interest expense using the effective interest method over the life of the loan.

In connection with the Horizon Credit Agreement, the Company incurred financing fees and expenses totaling $175,000 which are recorded and classified as debt discount. In addition, the Company paid loan origination fees of $100,000 which has been recorded and classified as debt discount. These debt discount amounts totaling $782,116 are being amortized as interest expense using the effective interest method over the life of the loan. Also, in connection with each of the Horizon Credit Agreements, the Company is required to pay an end of term charge equal to 4.0% of the original loan amount at time of maturity. Therefore, these amounts totaling $400,000 are being amortized as interest expense using the effective interest method over the life of the loan.

During the three-month period ending March 31, 2019, the Company incurred $253,289 in interest expense and amortized $97,458 respectively, as interest expense for debt discounts and end of term charges in connection with the Horizon Credit Agreement.

Following is a schedule of future principal payments, net of unamortized debt discounts and amortized end of term charges, due on the Horizon Credit Agreement:

	As of March 31,
2020	$ -
2021	3,333,333
2022	5,000,000
2023	1,666,667
2024 and thereafter	-
Subtotal of future principal payments	10,000,000
Unamortized debt issuance costs, net	(485,505)
	$ 9,514,495

Note 11. Stockholders' Equity

In September 2018, the Company filed with the SEC a new $75 million shelf registration statement on Form S-3 (the 2018 Shelf Registration Statement) (File No. 333-227236) that allows the Company to issue any combination of common stock, preferred stock or warrants to purchase common stock or preferred stock. This shelf registration was declared effective on October 12, 2018 and will expire three years from that date.

Authorized Shares

At the 2016 Annual Meeting of Stockholders of the Company in June 2016, the Company's stockholders approved an increase in the number of the authorized shares of the Company's common stock from 75,000,000 shares to 112,500,000 shares. The number of the authorized shares of preferred stock remains at 100,000 shares. The aggregate number of shares of all classes of stock that the Company may issue, after giving effect to such amendment as approved by the stockholders, will be 112,600,000 shares.

Reverse Stock Split

On May 26, 2017, the Company effected a 14-for-1 reverse stock split of its common stock which was made effective for trading purposes as of the commencement of trading on May 30, 2017. As of that date, each 14 shares of issued and outstanding common stock and equivalents was consolidated into one share of common stock. All shares have been restated to reflect the effects of the 14 -for- 1 reverse stock split. In addition, at the market open on May 30, 2017, the Company's common stock started trading under a new CUSIP number 15117N503 although the Company's ticker symbol, CLSN, remained unchanged.

The reverse stock split was previously approved by the Company's stockholders at the 2017 Annual Meeting held on May 16, 2017, and the Company subsequently filed a Certificate of Amendment to its Certificate of Incorporation to effect the stock consolidation. The primary reasons for the reverse stock split and the amendment are:

- To increase the market price of the Company's common stock making it more attractive to a broader range of institutional and other investors, and
- To provide the Company with additional capital resources and flexibility sufficient to execute its business plans including the establishment of strategic relationships with other companies and to ensure its ability to raise additional capital as necessary.

Immediately prior to the reverse stock split, the Company had 56,982,418 shares of common stock outstanding which consolidated into 4,070,172 shares of the Company's common stock. No fractional shares were issued in connection with the reverse stock split. Holders of fractional shares have been paid out in cash for the fractional portion with the Company's overall exposure for such payouts consisting of a nominal amount. The number of outstanding options and warrants were adjusted accordingly, with outstanding options being reduced from approximately 2.4 million to approximately 0.2 million and outstanding warrants being reduced from approximately 33.5 million to approximately 2.4 million.

Aspire Purchase Agreement

On August 31, 2018, we entered into a common stock purchase agreement (the "Aspire Purchase Agreement") with Aspire Capital Fund, LLC ("Aspire Capital") which provides that, upon the terms and subject to the conditions and limitations set forth therein, Aspire Capital is committed to purchase up to an aggregate of $15.0 million of shares of the Company's common stock over the 24-month term of the Aspire Purchase Agreement. On October 12, 2018, the Company filed with the SEC a prospectus supplement to the 2018 Shelf Registration Statement registering all the shares of common stock that may be offered to Aspire Capital from time to time.

Under the Aspire Purchase Agreement, on any trading day selected by the Company, the Company has the right, in its sole discretion, to present Aspire Capital with a purchase notice (each, a "Purchase Notice"), directing Aspire Capital (as principal) to purchase up to 100,000 shares of the Company's common stock per business day, up to $15.0 million of the Company's common stock in the aggregate at a per share price (the "Purchase Price") equal to the lesser of:

- the lowest sale price of the Company's common stock on the purchase date; or
- the arithmetic average of the three (3) lowest closing sale prices for the Company's common stock during the ten (10) consecutive trading days ending on the trading day immediately preceding the purchase date.

The Company and Aspire Capital also may mutually agree to increase the number of shares that may be sold to as much as an additional 2,000,000 shares per business day.

In addition, on any date on which the Company submits a Purchase Notice to Aspire Capital in an amount equal to at least 100,000 shares, the Company also has the right, in its sole discretion, to present Aspire Capital with a volume-weighted average price purchase notice (each, a "VWAP Purchase Notice") directing Aspire Capital to purchase an amount of stock equal to up to 30% of the aggregate shares of the Company's common stock traded on its principal market on the next trading day (the "VWAP Purchase Date"), subject to a maximum number of shares the Company may determine. The purchase price per share pursuant to such VWAP Purchase Notice is generally 97% of the volume-weighted average price for the Company's common stock traded on its principal market on the VWAP Purchase Date.

The Purchase Price will be adjusted for any reorganization, recapitalization, non-cash dividend, stock split, or other similar transaction occurring during the period(s) used to compute the Purchase Price. The Company may deliver multiple Purchase Notices and VWAP Purchase Notices to Aspire Capital from time to time during the term of the Purchase Agreement, so long as the most recent purchase has been completed.

There are no trading volume requirements or restrictions under the Aspire Purchase Agreement, and the Company will control the timing and amount of sales of the Company's common stock to Aspire Capital. Aspire Capital has no right to require any sales by the Company but is obligated to make purchases from the Company as directed by the Company in accordance with the Aspire Purchase Agreement. There are no limitations on use of proceeds, financial or business covenants, restrictions on future funding, rights of first refusal, participation rights, penalties or liquidated damages in the Aspire Purchase Agreement. In consideration for entering into the Aspire Purchase Agreement, concurrently with the execution of the Aspire Purchase Agreement, the Company issued to Aspire Capital 164,835 shares of the Company's common stock (the "Commitment Shares"). The Company's policy is to record specific incremental costs directly attributable to an offering as a charge against the gross proceeds, if any, when the offering becomes effective. These Commitment Shares valued at $450,000 were recorded in September 2018 as costs of equity financing and charged against additional paid-in capital. The Aspire Purchase Agreement may be terminated by the Company at any time, at its discretion, without any cost to the Company. Aspire Capital has agreed that neither it nor any of its agents, representatives and affiliates shall engage in any direct or indirect short-selling or hedging of the Company's common stock during any time prior to the termination of the Aspire Purchase Agreement. Any proceeds from the Company receives under the Aspire Purchase Agreement are expected to be used for working capital and general corporate purposes. During 2018, the Company sold and issued an aggregate of 100,000 shares under the Aspire Purchase Agreement, receiving approximately $0.2 million. The Company sold and issued an aggregate of 600,000 shares under the Aspire Purchase Agreement, receiving approximately $1.3 million during the first three months of 2019. Subsequent to the date of the balance sheet and through May 14, 2019, the Company sold 700,000 shares under the Aspire Purchase Agreement, receiving approximately $1.5 million in additional gross proceeds. As of March 31, 2019, the Company has $12.9 million remaining under the Aspire Purchase Agreement.

Capital on Demand™ Sales Agreement

On December 4, 2018, the Company entered into a Capital on Demand™ Sales Agreement (the "Capital on Demand Agreement") with JonesTrading Institutional Services LLC, as sales agent ("JonesTrading"), pursuant to which the Company may offer and sell, from time to time, through JonesTrading shares of common stock having an aggregate offering price of up to $16.0 million. The Company intends to use the net proceeds from the offering, if any, for general corporate purposes, including research and development activities, capital expenditures and working capital.

The Company is not obligated to sell any common stock under the Capital on Demand Agreement and, subject to the terms and conditions of the Capital on Demand Agreement, JonesTrading will use commercially reasonable efforts, consistent with its normal trading and sales practices and applicable state and federal law, rules and regulations and the rules of The NASDAQ Capital Market, to sell common stock from time to time based upon the Company's instructions, including any price, time or size limits or other customary parameters or conditions the Company may impose. Under the Capital on Demand Agreement, JonesTrading may sell common stock by any method deemed to be an "at the market offering" as defined in Rule 415 promulgated under the Securities Act of 1933, as amended.

The Capital on Demand Agreement will terminate upon the earlier of (i) the sale of all shares of our common stock subject to the Sales Agreement, and (ii) the termination of the Capital on Demand Agreement by JonesTrading or Celsion. The Capital on Demand Agreement may be terminated by JonesTrading or the Company at any time upon 10 days' notice to the other party, or by JonesTrading at any time in certain circumstances, including the occurrence of a material adverse change in the Company.

The Company will pay JonesTrading a commission of 3.0% of the aggregate gross proceeds from each sale of Common Stock and has agreed to provide JonesTrading with customary indemnification and contribution rights.

The Shares will be issued pursuant to the Company's previously filed and effective Registration Statement on Form S-3 (File No. 333-227236), the base prospectus dated October 12, 2018, filed as part of such Registration Statement, and the prospectus supplement dated December 4, 2018, filed by Celsion with the Securities and Exchange Commission. The Company did not sell any shares under the Capital on Demand Agreement as of December 31, 2018. During the first three months of 2019 the Company sold and issued an aggregate of 122,186 shares under the Capital on Demand Agreement, receiving approximately $0.3 million. Subsequent to the date of the balance sheet and through May 14, 2019, the Company sold 120,700 shares under the Capital on Demand Agreement, receiving approximately $0.3 million in additional gross proceeds. As of March 31, 2019, the Company has $15.7 million remaining under the Capital on Demand Agreement.

Controlled Equity Offering

On February 1, 2013, the Company entered into a Controlled Equity Offering SM Sales Agreement (the "ATM Agreement") with Cantor Fitzgerald & Co., as sales agent ("Cantor"), pursuant to which Celsion could offer and sell, from time to time, through Cantor, shares of our common stock having an aggregate offering price of up to $25.0 million (the "ATM Shares") pursuant to the 2015 Shelf Registration Statement. Under the ATM Agreement, Cantor may sell ATM Shares by any method deemed to be an "at-the-market" offering as defined in Rule 415 promulgated under the Securities Act of 1933, as amended, including sales made directly on The NASDAQ Capital Market, on any other existing trading market for our common stock or to or through a market maker. On October 10, 2018, the Company delivered notice to Cantor terminating the ATM effective as of October 20, 2018. The Company has no further obligations under the Sales Agreement. From February 1, 2013 through the date of the termination of the ATM Agreement, the Company sold and issued an aggregate of 1,784,396 shares of common stock under the ATM Agreement, receiving approximately $12.8 million in gross proceeds. During the first three months of 2018, the Company received approximately $1.2 million in proceeds from the sale of 457,070 shares of common stock under the ATM Agreement.

Note 12. Stock-Based Compensation

The Company has long-term compensation plans that permit the granting of equity based-awards in the form of stock options, restricted stock, restricted stock units, stock appreciation rights, other stock awards, and performance awards.

At the 2018 Annual Stockholders Meeting of the Company held on May 15, 2018, stockholders approved the Celsion Corporation 2018 Stock Incentive Plan (the "2018 Plan"). The 2018 Plan, as adopted, permits the granting of 2,700,000 shares of Celsion common stock as equity awards in the form of incentive stock options, nonqualified stock options, restricted stock, restricted stock units, stock appreciation rights, other stock awards, performance awards, or in any combination of the foregoing. Prior to the adoption of the 2018 Plan, the Company had maintained the Celsion Corporation 2007 Stock Incentive Plan (the 2007 Plan). The 2007 Plan permitted the granting of 688,531 shares of Celsion common stock as equity awards in the form of incentive stock options, nonqualified stock options, restricted stock, restricted stock units, stock appreciation rights, phantom stock, performance awards, or in any combination of the foregoing. The 2018 Plan replaced the 2007 Plan although the 2007 Plan remains in effect for awards previously granted under the 2007 Plan. Under the terms of the 2018 Plan, any shares subject to an award under the 2007 Plan which are not delivered because of the expiration, forfeiture, termination or cash settlement of the award will become available for grant under the 2018 Plan.

The Company has issued stock awards to employees and directors in the form of stock options and restricted stock. Options are generally granted with strike prices equal to the fair market value of a share of Celsion common stock on the date of grant. Incentive stock options may be granted to purchase shares of common stock at a price not less than 100% of the fair market value of the underlying shares on the date of grant, provided that the exercise price of any incentive stock option granted to an eligible employee owning more than 10% of the outstanding stock of Celsion must be at least 110% of such fair market value on the date of grant. Only officers and key employees may receive incentive stock options.

Option and restricted stock awards vest upon terms determined by the Compensation Committee of the Board of Directors and are subject to accelerated vesting in the event of a change of control or certain terminations of employment. The Company issues new shares to satisfy its obligations from the exercise of options or the grant of restricted stock awards.

On September 28, 2018, and again on February 19, 2019, the Compensation Committee of the Board of Directors approved the grant of (i) inducement stock options (the "Inducement Option Grants") to purchase a total of 164,004 and 140,004 shares of Celsion common stock, respectively and (ii) inducement restricted stock awards (the "Inducement Stock Grants") totaling 19,000 and 13,000 shares of Celsion common stock to five new employees collectively. Each award has a grant date of the date of grant. Each Inducement Option Grant has an exercise price per share equal to 2.77 and $2.18 which represents the closing price of Celsion's common stock as reported by Nasdaq on September 28, 2018 and February 19, 2019, respectively. Each Inducement Option Grant will vest over three years, with one-third vesting on the one-year anniversary of the employee's first day of employment with the Company and one-third vesting on the second and third anniversaries thereafter, subject to the new employee's continued service relationship with the Company on each such date. Each Inducement Option Grant has a ten-year term and is subject to the terms and conditions of the applicable stock option agreement. Each of Inducement Stock Grant will vest on the one-year anniversary of the employee's first day of employment with the Company and are subject to the new employee's continued service relationship with the Company through such date and is subject to the terms and conditions of the applicable restricted stock agreement.

As of March 31, 2019, there were a total of 3,385,393 shares of Celsion common stock reserved for issuance under the 2018 Plan, which were comprised of 3,359,886 shares of Celsion common stock subject to equity awards previously granted under the 2018 Plan and 2007 Plan and 25,507 shares of Celsion common stock available for future issuance under the 2018 Plan. As of March 31, 2019, there were a total of 259,506 of Celsion common stock subject to outstanding inducement awards.

Total compensation cost related to stock options and restricted stock awards amounted to $691,145 and $169,508 for the three-month periods ended March 31, 2019, and 2018, respectively. Of these amounts, $240,387 and $52,322 was charged to research and development during the three-month periods ended March 31, 2019 and 2018, respectively, and $450,758 and $117,186 was charged to general and administrative expenses during the three-month periods ended March 31, 2019 and 2018, respectively.

As of March 31, 2019, there was $1.9 million of total unrecognized compensation cost related to non-vested stock-based compensation arrangements. That cost is expected to be recognized over a weighted-average period of 1.0 years. The weighted average grant date fair values of the stock options granted during the three-month periods ended March 31, 2019 and 2018 was $1.90 and $2.27, respectively.

A summary of stock option awards and restricted stock grants for the three-months ended March 31, 2019 is presented below:

	Stock Options		Restricted Stock Awards		Weighted Average
	Options Outstanding	Weighted Average Exercise Price	Non-vested Restricted Stock Outstanding	Weighted Average Grant Date Fair Value	Contractual Terms of Equity Awards (in years)
Equity awards outstanding at January 1, 2019	3,148,743	$ 2.67	22,500	$ 2.72	
Equity awards granted	454,504	$ 2.18	13,000	$ 2.18	
Vested and issued	-	$ -	(8,000)	$ 2.60	
Equity awards forfeited, cancelled or expired	(11,355)	$ 2.37	-	$ -	
Equity awards outstanding at March 31, 2019	3,591,892	$ 2.60	27,500	$ 2.50	9.1
Aggregate intrinsic value of outstanding equity awards at March 31, 2019	$ -		$ 53,900		
Equity awards exercisable at March 31, 2019	1,684,265	$ 2.97			9.3
Aggregate intrinsic value of equity awards exercisable at March 31, 2019	$ -				

The fair values of stock options granted were estimated at the date of grant using the Black-Scholes option pricing model. The Black-Scholes model was originally developed for use in estimating the fair value of traded options, which have different characteristics from Celsion's stock options. The model is also sensitive to changes in assumptions, which can materially affect the fair value estimate. The Company used the following assumptions for determining the fair value of options granted under the Black-Scholes option pricing model:

	Three Months Ended March 31,	
	2019	**2018**
Risk-free interest rate	2.65%	2.82%
Expected volatility	101.3 -106.2%	99.9%
Expected life (in years)	7.5 - 9.3	10
Expected dividend yield	-%	-%

Expected volatilities utilized in the model are based on historical volatility of the Company's stock price. The risk-free interest rate is derived from values assigned to U.S. Treasury bonds with terms that approximate the expected option lives in effect at the time of grant. Starting in 2017, the Company elected to account for any forfeitures when they occur.

Note 13. Earn-out Milestone Liability

The total aggregate purchase price for the EGEN asset acquisition included potential future Earn-out Payments contingent upon achievement of certain milestones. The difference between the aggregate $30.4 million in future Earn-out Payments and the $13.9 million included in the fair value of the acquisition consideration at June 20, 2014 was based on the Company's risk-adjusted assessment of each milestone (10% to 67%) and utilizing a discount rate based on the estimated time to achieve the milestone (1.5 to 2.5 years). The earn-out milestone liability will be fair valued at the end of each quarter and any change in their value will be recognized in the financial statements.

On March 28, 2019, the Company and EGWU, Inc, entered into an amendment to the Asset Purchase Agreement discussed in Note 8 (the "Amended Asset Purchase Agreement"). Pursuant to the Amended Asset Purchase Agreement, payment of the earnout milestone liability related to the Ovarian Cancer Indication of $12.4 million has been modified. The Company has the option to make the payment as follows:

a) $7.0 million in cash within 10 business days of achieving the milestone; or

b) $12.4 million in cash, common stock of the Company, or a combination of either, within one year of achieving the milestone.

The Company provided EGWU, Inc. 200,000 warrants to purchase common stock at a strike price of $0.01 per warrant share as consideration for entering into this amended agreement. The warrants shares have no expiration and were fair valued at $2.00 using the closing price of a share of Celsion stock on the date of issuance offset by the exercise price and recorded as a non-cash expense in the income statement and were classified as equity on the balance sheet.

At December 31, 2018, the Company fair valued the earn-out milestone liability at $8.9 million. At March 31, 2019, the Company fair valued the earnout milestone liability at $5.8 million and recognized a non-cash benefit of $3.1 million during the three months ended March 31, 2019 as a result of the change in fair value of the earnout milestone liability at December 31, 2018. In assessing the earnout milestone liability at March 31, 2019, the Company the fair valued each of the two payment options per the Amended Asset Purchase Agreement and weighted them at 80% and 20% probability for the $7.0 million and the $12.4 million payments, respectively.

As of March 31, 2018, and December 31, 2017, the Company fair valued these milestones at $12.8 million and $12.5 million, respectively, and recognized a non-cash charge of $270,195 during the three months ended March 31, 2018 as a result of the change in the fair value of these milestones from December 31, 2017.

The following is a summary of the changes in the earn-out milestone liability for 2018:

Balance at January 1, 2019	$	(8,907,664)
Non-cash gain from the adjustment for the change in fair value		3,130,000
Balance at March 31, 2019	$	(5,777,664)

The following is a schedule of the Company's risk-adjustment assessment of each milestone:

Date	Risk-adjustment Assessment of achieving each Milestone	Discount Rate	Estimated Time to Achieve
March 31, 2019	80%	9%	1.00 to 2.00 years
December 31, 2018	80%	9%	1.25 years
March 31, 2018	35% to 80%	9%	1.08 to 1.25 years
December 31, 2017	35% to 80%	9%	1.33 to 1.50 years

Note 14. Warrants

Common Stock Warrants

Following is a summary of all warrant activity for the three months ended March 31, 2019:

Warrants	Number of Warrants Issued	Weighted Average Exercise Price
Warrants outstanding at December 31, 2018	1,593,162	$ 5.36
Warrants issued during the three months ended March 31, 2019 (see Note 13)	200,000	$ 0.01
Warrants outstanding at March 31, 2019	1,793,162	$ 4.77
Aggregate intrinsic value of outstanding warrants at March 31, 2019	$ 390,000	

Schedule of weighted average remaining contractual terms at March 31, 2019	Number of Warrants Issued	Weighted Average Exercise Price	Weighted Average Contractual Terms Remaining (in years)
Warrants provided to EGWU, Inc (Note 13)	200,000	$ 0.01	No expiration
Series DDD Warrants	1,166,250	$ 6.20	Expired on April 4, 2019
All other warrants outstanding	426,912	$ 3.08	6.0

Note 15. Leases

In July 2011, the Company executed a lease (the “Lease”) with Brandywine Operating Partnership, L.P. (Brandywine), a Delaware limited partnership for a 10,870 square foot premises located in Lawrenceville, New Jersey. In October 2011, the Company relocated its offices to Lawrenceville, New Jersey from Columbia, Maryland. The Lease had an initial term of 66 months. In late 2015, Lenox Drive Office Park LLC, purchased the real estate and office building and assumed the Lease. This Lease was set to expire on April 30, 2017. In April 2017, the Company and the landlord amended the Lease effective May 1, 2017. The 1st Lease Amendment extended the term of the agreement for an additional 64 months, reduced the premises to 7,565 square feet, reduced the monthly rent and provided four months free rent. The monthly rent ranged from approximately $18,900 in the first year to approximately $20,500 in the final year of the 1st Lease Amendment. The Company also had a one-time option to cancel the lease as of the 40th month after the commencement date of the 1st Lease Amendment and must provide the landlord notice by the 28th month of the lease. Effective January 9, 2019, we amended the current terms of the 1st Lease Amendment to increase the size of the premises by 2,285 square feet to 9,850 square feet and also extended the lease term by one year to September 1, 2023. In conjunction with this 2nd Lease Amendment, we agreed to modify our one-time option to cancel the lease as of the end of August 2021 and we must provide notice to the landlord by the end of August 2020. The monthly rent will range from approximately $25,035 in the first year to approximately $27,088 in the final year of the 2nd Lease Amendment.

In connection with the EGEN Asset Purchase Agreement in June 2014, the Company assumed the existing lease with another landlord for an 11,500 square foot premises located in Huntsville Alabama. In January 2018, the Company and the Huntsville landlord entered into a new 60-month lease which reduced the premises to 9,049 square feet with rent payments of approximately $18,100 per month.

As previously mentioned in Note 4, we adopted ASC Topic 842 on January 1, 2019 using the modified retrospective transition method for all lease arrangements at the beginning of the period of adoption. Results for reporting periods beginning January 1, 2019 are presented under ASC 842, while prior period amounts were not adjusted and continue to be reported in accordance with our historic accounting under Topic 840, Leases. The standard had a material impact on our Consolidated Condensed Balance Sheet but had no impact on our consolidated net earnings and cash flows. The most significant impact of adopting ASC Topic 842 was the recognition of the right-of-use (ROU) asset and lease liabilities for operating leases, which are presented in the following three-line items on the Consolidated Condensed Balance Sheet: (i) operating lease right-of-use asset; (ii) current operating lease liabilities; and (iii) operating lease liabilities. Therefore, on date of adoption of ASC Topic 842, the Company recognized a ROU asset of $1.4 million, operating lease liabilities, current and non-current collectively, of $1.5 million and reduced other liabilities by approximately $0.1 million. We elected the package of practical expedients for leases that commenced before the effective date of ASC Topic 842 whereby we elected to not reassess the following: (i) whether any expired or existing contracts contain leases; (ii) the lease classification for any expired or existing leases; and (iii) initial direct costs for any existing leases. In addition, we have lease agreements with lease and non-lease components, and we have elected the practical expedient for all underlying asset classes and account for them as a single lease component. We have no finance leases. We determine if an arrangement is a lease at inception. We have operating leases for office space and research and development facilities. Neither of our leases include options to renew, however, one contains an option for early termination. We considered the option of early termination in measurement of right-of-use assets and lease liabilities and we determined it is not reasonably certain to be terminated. In connection with the 2nd Lease Amendment for the New Jersey office lease in January 2019, the Company considered this as one modified lease and not as two separate leases. Therefore, in January 2019, the Company determined this lease was an operating lease and remeasured the ROU asset and lease liability. Therefore, the Company increased the ROU asset and operating lease liabilities by $0.4 million to $1.8 million and $1.9 million, respectively.

Following is a table of the lease payments and maturity of our operating lease liabilities as of March 31, 2019:

	For the year ending December 31,
Remainder of 2019	$ 379,678
2020	525,809
2021	530,734
2022	535,579
2023	233,117
2024 and thereafter	-
Subtotal future lease payments	2,204,917
Less imputed interest	(421,282)
Total lease liabilities	$ 1,783,635
Weighted average remaining life	4.2 years
Weighted average discount rate	9.98%

For the three months ended March 30, 2019, operating lease cost was $130,595. During the three-month period ended March 29, 2019, cash paid for operating leases included in operating cash flows was $106,000. For the three months ended March 30, 2018, operating lease cost was $114,999. During the three-month period ended March 29, 2018, cash paid for operating leases included in operating cash flows was $116,477.

Note 16. Technology Development and Licensing Agreements

On May 7, 2012, the Company entered into a long-term commercial supply agreement with Zhejiang Hisun Pharmaceutical Co. Ltd. (Hisun) for the production of ThermoDox® in the China territory. In accordance with the terms of the agreement, Hisun will be responsible for providing all of the technical and regulatory support services, including the costs of all technical transfer, registration and bioequivalence studies, technical transfer costs, Celsion consultative support costs and the purchase of any necessary equipment and additional facility costs necessary to support capacity requirements for the manufacture of ThermoDox®. Celsion will repay Hisun for the aggregate amount of these development costs and fees commencing on the successful completion of three registration batches of ThermoDox®. Hisun is also obligated to certain performance requirements under the agreement. The agreement will initially be limited to a percentage of the production requirements of ThermoDox® in the China territory with Hisun retaining an option for additional global supply after local regulatory approval in the China territory. In addition, Hisun will collaborate with Celsion around the regulatory approval activities for ThermoDox® with the China State Food and Drug Administration (CHINA FDA). During the first quarter of 2015, Hisun completed the successful manufacture of three registration batches of ThermoDox®.

On January 18, 2013, we entered into a technology development contract with Hisun, pursuant to which Hisun paid us a non-refundable research and development fee of $5 million to support our development of ThermoDox® in mainland China, Hong Kong and Macau (the China territory). Following our announcement on January 31, 2013 that the HEAT study failed to meet its primary endpoint, Celsion and Hisun have agreed that the Technology Development Contract entered into on January 18, 2013 will remain in effect while the parties continue to collaborate and are evaluating the next steps in relation to ThermoDox® , which include the sub-group analysis of patients in the Phase III HEAT Study for the hepatocellular carcinoma clinical indication and other activities to further the development of ThermoDox® for the Greater China market. The $5.0 million received as a non-refundable payment from Hisun in the first quarter 2013 has been recorded to deferred revenue and will continue to be amortized over the 10 -year term of the agreement, until such time as the parties find a mutually acceptable path forward on the development of ThermoDox® based on findings of the ongoing post-study analysis of the HEAT Study data.

On July 19, 2013, the Company and Hisun entered into a Memorandum of Understanding to pursue ongoing cooperation for the continued clinical development of ThermoDox® as well as the technology transfer relating to the commercial manufacture of ThermoDox® for the China territory. This expanded level of cooperation includes development of the next generation liposomal formulation with the goal of creating safer, more efficacious versions of marketed cancer chemotherapeutics.

Among the key provisions of the Celsion-Hisun Memorandum of Understanding are:

- Hisun will provide the Company with internal resources necessary to complete the technology transfer of the Company's proprietary manufacturing process and the production of registration batches for the China territory;

- Hisun will coordinate with the Company around the clinical and regulatory approval activities for ThermoDox® as well as other liposomal formations with the CHINA FDA; and

- Hisun will be granted a right of *first* offer for a commercial license to ThermoDox® for the sale and distribution of ThermoDox® in the China territory.

On August 8, 2016, we signed a Technology Transfer, Manufacturing and Commercial Supply Agreement ("GEN-1 Agreement") with Hisun to pursue an expanded partnership for the technology transfer relating to the clinical and commercial manufacture and supply of GEN- 1, Celsion's proprietary gene mediated, IL- 12 immunotherapy, for the greater China territory, with the option to expand into other countries in the rest of the world after all necessary regulatory approvals are in effect. The GEN- 1 Agreement will help to support supply for both ongoing and planned clinical studies in the U.S., and for potential future studies of GEN- 1 in China. GEN- 1 is currently being evaluated by Celsion in first line ovarian cancer patients.

Key provisions of the GEN-1 Agreement are as follows:

- the GEN-1 Agreement has targeted unit costs for clinical supplies of GEN-1 that are substantially competitive with the Company's current suppliers;

- once approved, the cost structure for GEN-1 will support rapid market adoption and significant gross margins across global markets;

- Celsion will provide Hisun a certain percentage of China's commercial unit demand, and separately of global commercial unit demand, subject to regulatory approval;

- Hisun and Celsion will commence technology transfer activities relating to the manufacture of GEN-1, including all studies required by CHINA FDA for site approval; and

- Hisun will collaborate with Celsion around the regulatory approval activities for GEN-1 with the CHINA FDA. A local China partner affords Celsion access to accelerated CHINA FDA review and potential regulatory exclusivity for the approved indication.

The Company evaluated the Hisun arrangement in accordance with ASC 606 and determined that its performance obligations under the agreement include the non-exclusive, royalty-free license, research and development services to be provided by the Company, and its obligation to serve on a joint committee. The Company concluded that the license was not distinct since its value is closely tied to the ongoing research and development activities. As such, the license and the research and development services are be bundled as a single performance obligation. Since the provision of the license and research and development services are considered a single performance obligation, the $5,000,000 upfront payment is being recognized as revenue ratably through 2022.

Item 2. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS.

Forward-Looking Statements

Statements and terms such as "expect", "anticipate", "estimate", "plan", "believe" and words of similar import regarding our expectations as to the development and effectiveness of our technologies, the potential demand for our products, and other aspects of our present and future business operations, constitute forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. Although we believe that our expectations are based on reasonable assumptions within the bounds of our knowledge of our industry, business and operations, we cannot guarantee that actual results will not differ materially from our expectations. In evaluating such forward-looking statements, readers should specifically consider the various factors contained in the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2018 filed with the SEC on March 29, 2019, which factors include, without limitation, plans and objectives of management for future operations or programs or proposed new products or services; changes in the course of research and development activities and in clinical trials; possible changes in cost and timing of development and testing; possible changes in capital structure, financial condition, working capital needs and other financial items; changes in approaches to medical treatment; clinical trial analysis and future plans relating thereto; our ability to realize the full extent of the anticipated benefits of our acquisition of substantially all of the assets of EGEN, Inc., including achieving operational cost savings and synergies in light of any delays we may encounter in the integration process and additional unforeseen expenses; introduction of new products by others; possible licenses or acquisitions of other technologies, assets or businesses; and possible actions by customers, suppliers, partners, competitors and regulatory authorities. These and other risks and uncertainties could cause actual results to differ materially from those indicated by forward-looking statements.

The discussion of risks and uncertainties set forth in this Quarterly Report on Form 10-Q and in our most recent Annual Report on Form 10-K, as well as in other filings with the SEC, is not a complete or exhaustive list of all risks facing the Company at any particular point in time. We operate in a highly competitive, highly regulated and rapidly changing environment and our business is constantly evolving. Therefore, it is likely that new risks will emerge, and that the nature and elements of existing risks will change, over time. It is not possible for management to predict all such risk factors or changes therein, or to assess either the impact of all such risk factors on our business or the extent to which any individual risk factor, combination of factors, or new or altered factors, may cause results to differ materially from those contained in any forward-looking statement. We disclaim any obligation to revise or update any forward-looking statement that may be made from time to time by us or on our behalf.

Strategic and Clinical Overview

Celsion is a fully-integrated development clinical stage oncology drug company focused on advancing innovative cancer treatments, including directed chemotherapies, DNA-mediated immunotherapy and RNA based therapies. Our lead product candidate is ThermoDox®, a proprietary heat-activated liposomal encapsulation of doxorubicin, currently in a Phase III clinical trial for the treatment of primary liver cancer (the "OPTIMA Study"). Second in our pipeline is GEN-1, a DNA-mediated immunotherapy for the localized treatment of ovarian cancer. These investigational products are based on technologies that provide the platform for the future development of a range of therapeutics for difficult-to-treat forms of cancer. The first technology is Lysolipid Thermally Sensitive Liposomes, a heat sensitive liposomal based dosage form that targets disease with known chemotherapeutics in the presence of mild heat. The second technology is TheraPlas, a novel nucleic acid-based treatment for local transfection of therapeutic DNA plasmids. With these technologies we are working to develop and commercialize more efficient, effective and targeted oncology therapies that maximize efficacy while minimizing side effects common to cancer treatments.

ThermoDox®

ThermoDox® is being evaluated in a Phase III clinical trial for primary liver cancer, which we call the OPTIMA Study, which was initiated in 2014. ThermoDox® is a liposomal encapsulation of doxorubicin, an approved and frequently used oncology drug for the treatment of a wide range of cancers. Localized heat at hyperthermia temperatures (greater than 40° Celsius) releases the encapsulated doxorubicin from the liposome enabling high concentrations of doxorubicin to be deposited preferentially in and around the targeted tumor.

The OPTIMA Study. The OPTIMA Study represents an evaluation of ThermoDox® in combination with a first line therapy, RFA, for newly diagnosed, intermediate stage HCC patients. HCC incidence globally is approximately 755,000 new cases per year and is the third largest cancer indication globally. Approximately 30% of newly diagnosed patients can be addressed with RFA.

On February 24, 2014, we announced that the United States Food and Drug Administration (the "FDA") provided clearance for the OPTIMA Study, which is a pivotal, double-blind, placebo-controlled Phase III trial of ThermoDox®, in combination with standardized RFA, for the treatment of primary liver cancer. The trial design of the OPTIMA Study is based on the comprehensive analysis of data from an earlier clinical trial called the HEAT Study (the "HEAT Study"). The OPTIMA Study is supported by a hypothesis developed from an overall survival analysis of a large subgroup of patients from the HEAT Study.

The OPTIMA Study was designed with extensive input from globally recognized HCC researchers and expert clinicians and after receiving formal written feedback from the FDA. The OPTIMA Study was designed to enroll up to 550 patients globally at approximately 65 clinical sites in the U.S., Canada, European Union (EU), China and other countries in the Asia-Pacific region and will evaluate ThermoDox® in combination with standardized RFA, which will require a minimum of 45 minutes across all investigators and clinical sites for treating lesions three to seven centimeters, versus standardized RFA alone. The primary endpoint for this clinical trial is overall survival ("OS"), and the secondary endpoints are progression free survival and safety. The statistical plan calls for two interim efficacy analyses by an independent Data Monitoring Committee ("DMC").

Post-hoc data analysis from our earlier Phase III HEAT Study suggest that ThermoDox® may substantially improve OS, when compared to the control group, in patients if their lesions undergo a 45-minute RFA procedure standardized for a lesion greater than 3 cm in diameter. Data from nine OS sweeps have been conducted since the top line progression free survival ("PFS") data from the HEAT Study were announced in January 2013, with each data set demonstrating substantial improvement in clinical benefit over the control group with statistical significance. On August 15, 2016, we announced updated results from its final retrospective OS analysis of the data from the HEAT Study. These results demonstrated that in a large, well bounded, subgroup of patients with a single lesion (n=285, 41% of the HEAT Study patients), treatment with a combination of ThermoDox® and optimized RFA provided an average 54% risk improvement in OS compared to optimized RFA alone. The Hazard Ratio ("HR") at this analysis is 0.65 (95% CI 0.45 - 0.94) with a p-value of 0.02. Median OS for the ThermoDox® group has been reached which translates into a two-year survival benefit over the optimized RFA group (projected to be greater than 80 months for the ThermoDox® plus optimized RFA group compared to less than 60 months projection for the optimized RFA only group).

We completed enrollment of 556 patients in the Phase III OPTIMA Study in August 2018. Data for the study will be reviewed as it matures up to two interim analyses expected to be conducted in the second half of 2019 and in mid-2020. We expect that the final efficacy analysis, if necessary, will be completed in the first half of 2021. If the study proves to provide a clinically meaningful improvement in overall survival, Celsion will immediately apply for marketing authorization in the US, Europe and China. ThermoDox® has received U.S. FDA Fast Track Designation and has been granted orphan drug designation for primary liver cancer in both the U.S. and the EU. Additionally, the U.S. FDA has provided ThermoDox® with a 505(b)(2) registration pathway. Subject to a successful trial, the OPTIMA Study has been designed to support registration in all key primary liver cancer markets. We fully expect to submit registrational applications in the U.S., Europe and China. We expect to submit and believes that applications will be accepted in South Korea, Taiwan and Vietnam, three other significant markets for ThermoDox® if it were to receive approval in Europe, China or the U.S.

On December 18, 2018, we announced that the DMC for the OPTIMA Study completed its last scheduled review of all patients enrolled in the trial and unanimously recommended that the OPTIMA Study continue according to protocol to its final data readout. The DMC's recommendation was based on the Committee's assessment of safety and data integrity of all patients randomized in the trial as of October 4, 2018. The DMC reviewed study data at regular intervals throughout the patient enrollment period, with the primary responsibilities of ensuring the safety of all patients enrolled in the study, the quality of the data collected, and the continued scientific validity of the study design. As part of its review of all 556 patients enrolled into the trial, the DMC evaluated a quality matrix relating to the total clinical data set, confirming the timely collection of data, that all data are current as well as other data collection and quality criteria.

While this information should be viewed with caution since it is based on a retrospective analysis of a subgroup, we also conducted additional analyses that further strengthen the evidence for the HEAT Study subgroup. We commissioned an independent computational model at the University of South Carolina Medical School. The results unequivocally indicate that longer RFA heating times correlate with significant increases in doxorubicin concentration around the RFA treated tissue. In addition, we conducted a prospective preclinical study in 22 pigs using two different manufacturers of RFA and human equivalent doses of ThermoDox® that clearly support the relationship between increased heating duration and doxorubicin concentrations.

The HEAT Study. On January 31, 2013, the Company announced that the HEAT Study, ThermoDox® in combination with RFA, did not meet the primary endpoint, PFS, in the Phase III clinical trial enrolling 701 patients with primary liver cancer. This determination was made after conferring with the HEAT Study independent DMC, that the HEAT Study did not meet the goal of demonstrating a clinically meaningful improvement in progression free survival. In the trial, ThermoDox® was well-tolerated with no unexpected serious adverse events. Following the announcement of the HEAT Study results, we continued to follow patients for OS, the secondary endpoint of the HEAT Study. We have conducted a comprehensive analysis of the data from the HEAT Study to assess the future strategic value and development strategy for ThermoDox®.

Acquisition of EGEN Assets

On June 20, 2014, we completed the acquisition of substantially all of the assets of EGEN, which has changed its company name to EGWU, Inc. after the closing of the acquisition (“EGEN”), pursuant to an Asset Purchase Agreement dated as of June 6, 2014, by and between EGEN and Celsion (the “Asset Purchase Agreement”). We acquired all of EGEN’s right, title and interest in and to substantially all of the assets of EGEN, including cash and cash equivalents, patents, trademarks and other intellectual property rights, clinical data, certain contracts, licenses and permits, equipment, furniture, office equipment, furnishings, supplies and other tangible personal property. In addition, CLSN Laboratories assumed certain specified liabilities of EGEN, including the liabilities arising out of the acquired contracts and other assets relating to periods after the closing date.

At the time of the acquisition, the total purchase price for the asset acquisition was up to $44.4 million, including potential future earnout payments of up to $30.4 million contingent upon achievement of certain earnout milestones set forth in the Asset Purchase Agreement. We paid approximately $3.0 million in cash after the expense adjustment and issued 241,590 shares of our common stock to EGEN. The shares of common stock were issued in a private transaction exempt from registration under the Securities Act, pursuant to Section 4 (2) thereof.

On March 28, 2019, the Company and EGWU, Inc, entered into an amendment to the Asset Purchase Agreement discussed in Note 8 (the “Amended Asset Purchase Agreement”). Pursuant to the Amended Asset Purchase Agreement, payment of the earnout milestone liability related to the Ovarian Cancer Indication of $12.4 million has been modified. The Company has the option to make the payment as follows:

a) $7.0 million in cash within 10 business days of achieving the milestone; or

b) $12.4 million in cash, common stock of the Company, or a combination of either, within one year of achieving the milestone.

The Company provided EGWU, Inc. 200,000 warrants to purchase common stock at a strike price of $0.01 per warrant share as consideration for entering into this amended agreement. The warrants shares have no expiration and were fair valued at $2.00 using the closing price of a share of Celsion stock on the date of issuance offset by the exercise price and recorded as a non-cash expense in the income statement and were classified as equity on the balance sheet.

Acquired In-process Research and Development

Acquired in-process research and development (IPR&D) consists of EGEN's drug technology platforms: TheraPlas and TheraSilence. The fair value of the IPR&D drug technology platforms was estimated to be $24.2 million as of the acquisition date. As of the closing of the acquisition, the IPR&D was considered indefinite-lived intangible assets and will not be amortized. IPR&D is reviewed for impairment at least annually as of our third quarter ended September 30, and whenever events or changes in circumstances indicate that the carrying value of the assets might not be recoverable. On December 31, 2016, the Company determined one of its IPR&D assets related to its RNA delivery system was impaired and wrote off its fair value, incurring a non-cash charge of $1.4 million during 2016. During its annual assessments on September 30, 2017 and 2018, the Company determined its IPR&D asset related to its glioblastoma multiforme cancer (GBM) product candidate, originally fair valued at $9.4 million on the date of acquisition, was impaired and wrote this asset's carrying value down to $2.4 million collectively after those two assessments, incurring non-cash charges of $2.5 million and $4.5 million during 2017 and 2018, respectively. At September 30, 2018 and 2017, the Company evaluated its IPR&D of the ovarian cancer indication and concluded that it is not more likely than not that the asset is impaired. As no other indicators of impairment existed during the fourth quarter of 2018 and thus far in 2019, the Company concluded none of the other IPR&D assets were impaired at December 31, 2018 and March 31, 2019. The carrying amount of the ovarian cancer indication was $13.3 million at March 31, 2019.

Covenants Not To Compete

Pursuant to the EGEN Purchase Agreement, EGEN provided certain covenants ("Covenant Not To Compete") to the Company whereby EGEN agreed, during the period ending on the seventh anniversary of the closing date of the acquisition on June 20, 2014, not to enter into any business, directly or indirectly, which competes with the business of the Company nor will it contact, solicit or approach any of the employees of the Company for purposes of offering employment. The Covenant Not to Compete which was valued at approximately $1.6 million at the date of the EGEN asset acquisition has a definitive life and is amortized on a straight-line basis over its life of 7 years. The Company recognized amortization expense of $56,829 in each of the three-month periods ended March 31, 2019 and 2018. The carrying value of the Covenant Not to Compete was $511,463, net of $1,079,751, as of March 31, 2019 and $568,292, net of $1,022,922 accumulated amortization, as of December 31, 2018.

Goodwill

The purchase price exceeded the estimated fair value of the net assets acquired by approximately $2.0 million which was recorded as Goodwill. Goodwill represents the difference between the total purchase price for the net assets purchased from EGEN and the aggregate fair values of tangible and intangible assets acquired, less liabilities assumed. Goodwill is reviewed for impairment at least annually as of our third quarter ending on September 30 or sooner if we believe indicators of impairment exist. As of September 30, 2018, we concluded that the Company's fair value exceeded its carrying value therefore "it is not more likely than not" that the Goodwill was impaired. As no other indicators of impairment existed during the fourth quarter of 2018 and thus far in 2019, the Company concluded it is "not more likely than not" Goodwill was impaired.

GEN-1

GEN-1 is a DNA-based immunotherapeutic product candidate for the localized treatment of ovarian cancer by intraperitoneally administering an Interleukin-12 ("IL-12") plasmid formulated with our proprietary TheraPlas delivery system. In this DNA-based approach, the immunotherapy is combined with a standard chemotherapy drug, which can potentially achieve better clinical outcomes than with chemotherapy alone. We believe that increases in IL-12 concentrations at tumor sites for several days after a single administration could create a potent immune environment against tumor activity and that a direct killing of the tumor with concomitant use of cytotoxic chemotherapy could result in a more robust and durable antitumor response than chemotherapy alone. We believe the rationale for local therapy with GEN-1 is based on the following.

- Loco-regional production of the potent cytokine IL-12 avoids toxicities and poor pharmacokinetics associated with systemic delivery of recombinant IL-12;

- Persistent local delivery of IL-12 lasts up to one week and dosing can be repeated; and

- Ideal for long-term maintenance therapy.

OVATION Study

In February 2015, we announced that the FDA accepted, without objection, the Phase Ib dose-escalation clinical trial of GEN-1 in combination with the standard of care in neo-adjuvant ovarian cancer (the "OVATION Study"). On September 30, 2015, we announced enrollment of the first patient in the OVATION Study. The OVATION Study was designed (i) to identify a safe, tolerable and potentially therapeutically active dose of GEN-1 by recruiting and maximizing an immune response and (ii) to enroll three to six patients per dose level to evaluate safety and efficacy and attempt to define an optimal dose for a follow-on Phase II study. In addition, the OVATION Study establishes a unique opportunity to assess how cytokine-based compounds such as GEN-1 directly affect ovarian cancer cells and the tumor microenvironment in newly diagnosed patients. The study was designed to characterize the nature of the immune response triggered by GEN-1 at various levels of the patients' immune system, including:

We initiated the OVATION Study at four clinical sites at the University of Alabama at Birmingham, Oklahoma University Medical Center, Washington University in St. Louis and the Medical College of Wisconsin. During 2016 and 2017, we announced data from the first fourteen patients in the OVATION Study who completed treatment. On October 3, 2017 and again on March 2, 2109, we announced final clinical and translational research data from the OVATION Study, a Phase Ib dose escalating clinical trial combining GEN-1 with the standard of care for the treatment of newly-diagnosed patients with advanced Stage III/IV ovarian cancer who will undergo neoadjuvant chemotherapy followed by interval debulking surgery.

The Company reported positive clinical data from the first fourteen patients who have completed treatment in the OVATION Study. GEN-1 plus standard chemotherapy produced positive clinical results, with no dose limiting toxicities and positive dose dependent efficacy signals which correlate well with positive surgical outcomes. The OVATION Study evaluated escalating doses of GEN-1 (36 mg/m^2, 47 mg/m^2, 61 mg/m^2 and 79 mg/m^2) administered intraperitoneally in combination with three cycles of neoadjuvant chemotherapy prior to interval debulking surgery, followed by three cycles of NAC in the treatment of newly diagnosed patients with Stage III/IV ovarian cancer.

In this Phase IB dose-escalation study, the 14 patients who were evaluable for response demonstrated median PFS of 21 months in patients treated per protocol and 17.1 months for the intent-to-treat population (n=18) for all dose cohorts, including three patients who dropped out of the study after 13 days or less, and two patients who did not receive full NAC and GEN-1 cycles. In addition, 100% of patients administered NAC plus the two higher doses of GEN-1 experienced an objective tumor response (defined as a partial or complete response) compared to only 60% of patients given the two lower doses. Pathological changes were assessed as part of the study, with the density of markers measured in tissue sections assessed via immunohistochemistry staining. Dose-limiting toxicity was not reached in the OVATION I Study.

OVATION 2 Study

On November 13, 2017, the Company filed its Phase I/II clinical trial protocol with the U.S. Food and Drug Administration for GEN-1 for the localized treatment of ovarian cancer. The protocol is designed with a single dose escalation phase to 100 mg/m^2 to identify a safe and tolerable dose of GEN-1 while maximizing an immune response. The Phase I portion of the study will be followed by a continuation at the selected dose in 130 patient randomized Phase II study. The study protocol is summarized below:

- Open label, 1:1 randomized design
- Enrollment up to 130 patients with Stage III/IV ovarian cancer patients at ten U.S. centers
- Primary endpoint of improvement in progression-free survival (PFS) comparing GEN-1 with neoadjuvant chemotherapy versus neoadjuvant chemotherapy alone.

Because of the risks and uncertainties discussed in this Annual Report on Form 10-K, among others, we are unable to estimate the duration and completion costs of our research and development projects or when, if ever, and to what extent we will receive cash inflows from the commercialization and sale of a product. Our inability to complete any of our research and development activities, preclinical studies or clinical trials in a timely manner or our failure to enter into collaborative agreements when appropriate could significantly increase our capital requirements and could adversely impact our liquidity. While our estimated future capital requirements are uncertain and could increase or decrease as a result of many factors, including the extent to which we choose to advance our research, development activities, preclinical studies and clinical trials, or if we are in a position to pursue manufacturing or commercialization activities, we will need significant additional capital to develop our product candidates through development and clinical trials, obtain regulatory approvals and manufacture and commercialize approved products, if any. We do not know whether we will be able to access additional capital when needed or on terms favorable to us or our stockholders. Our inability to raise additional capital, or to do so on terms reasonably acceptable to us, would jeopardize the future success of our business.

TheraPlas Technology Platform. TheraPlas is a technology platform for the delivery of DNA and messenger RNA ("mRNA") therapeutics via synthetic non-viral carriers and is capable of providing cell transfection for double-stranded DNA plasmids and large therapeutic RNA segments such as mRNA. There are two components of the TheraPlas system, a plasmid DNA or mRNA payload encoding a therapeutic protein and a delivery system. The delivery system is designed to protect the DNA/RNA from degradation and promote trafficking into cells and through intracellular compartments. We designed the delivery system of TheraPlas by chemically modifying the low molecular weight polymer to improve its gene transfer activity without increasing toxicity. We believe TheraPlas is a viable alternative to current approaches to gene delivery due to several distinguishing characteristics, including enhanced molecular versatility that allows for complex modifications to improve activity and safety.

Technology Development and Licensing Agreements. Our current efforts and resources are applied on the development and commercialization of cancer drugs including tumor-targeting chemotherapy treatments using focused heat energy in combination with heat-activated drug delivery systems, immunotherapies and RNA-based therapies.

On August 8, 2016, we signed the GEN-1 Agreement with Hisun to pursue an expanded partnership for the technology transfer relating to the clinical and commercial manufacture and supply of GEN-1, Celsion's proprietary gene mediated, IL-12 immunotherapy, for the China territory, with the option to expand into other countries in the rest of the world after all necessary regulatory approvals are obtained. The GEN-1 Agreement will help to support supply for both ongoing and planned clinical studies in the U.S. and for potential future studies of GEN-1 in China. GEN-1 is currently being evaluated by Celsion in first line ovarian cancer patients.

In June 2012, Celsion and Hisun signed a long-term commercial supply agreement for the production of ThermoDox®. Hisun is one the largest manufacturers of chemotherapy agents globally, including doxorubicin. In July 2013, the ThermoDox® collaboration was expanded to focus on next generation liposomal formulation development with the goal of creating safer, more efficacious versions of marketed cancer chemotherapeutics. During 2015, Hisun successfully completed the manufacture of three registration batches for ThermoDox® and has obtained regulatory approvals to supply ThermoDox® to participating clinical trial sites in all of the countries of South East Asia and North America, as well as to the European Union countries allowing for early access to ThermoDox®. The future manufacturing of clinical and commercial supplies by Hisun will result in a cost structure allowing Celsion to profitably access all global markets, including third world countries, and help accelerate the Company's product development program in China for ThermoDox® in primary liver cancer and other approved indications.

Business Plan

As a clinical stage biopharmaceutical company, our business and our ability to execute our strategy to achieve our corporate goals are subject to numerous risks and uncertainties. Material risks and uncertainties relating to our business and our industry are described in "Part II, Item 1A. Risk Factors" in this Quarterly Report on Form 10-Q.

Since inception, the Company has incurred substantial operating losses, principally from expenses associated with the Company's research and development programs, clinical trials conducted in connection with the Company's product candidates, and applications and submissions to the FDA. We have not generated significant revenue and have incurred significant net losses in each year since our inception. As of March 31, 2019, we have incurred approximately $276 million of cumulative net losses. As of March 31, 2019, we had approximately $23.8 million in cash, investment securities and interest receivable. We have substantial future capital requirements to continue our research and development activities and advance our product candidates through various development stages. The Company believes these expenditures are essential for the commercialization of its technologies.

The Company expects its operating losses to continue for the foreseeable future as it continues its product development efforts and when it undertakes marketing and sales activities. The Company's ability to achieve profitability is dependent upon its ability to obtain governmental approvals, produce, and market and sell its new product candidates. There can be no assurance that the Company will be able to commercialize its technology successfully or that profitability will ever be achieved. The operating results of the Company have fluctuated significantly in the past. We have substantial future capital requirements associated with our continued research and development activities and to advance our product candidates through various stages of development. The Company believes these expenditures are essential for the commercialization of its technologies.

The actual amount of funds the Company will need to operate is subject to many factors, some of which are beyond the Company's control. These factors include the following:

- the progress of research activities;
- the number and scope of research programs;
- the progress of preclinical and clinical development activities;
- the progress of the development efforts of parties with whom the Company has entered into research and development agreements;
- the costs associated with additional clinical trials of product candidates;
- the ability to maintain current research and development licensing arrangements and to establish new research and development and licensing arrangements;
- the ability to achieve milestones under licensing arrangements;
- the costs involved in prosecuting and enforcing patent claims and other intellectual property rights; and
- the costs and timing of regulatory approvals.

The Company has based its estimate on assumptions that may prove to be wrong. The Company may need to obtain additional funds sooner or in greater amounts than it currently anticipates. Potential sources of financing include strategic relationships, public or private sales of the Company's shares or debt and other sources. If the Company raises funds by selling additional shares of common stock or other securities convertible into common stock, the ownership interest of existing stockholders may be diluted.

With $23.8 million in cash, investment securities and interest receivable at March 31, 2019 coupled with future sales of the Company's NJ NOL's, the Company believes it has sufficient capital resources to fund its operations into the fourth quarter of 2020. The Company will be required to obtain additional funding to continue development of its current product candidates within the anticipated time periods, if at all, and to continue to fund operations. As more fully discussed in Note 11, the Company has approximately $28.6 million available collectively for future sale of equity securities under a common stock purchase agreement with Aspire Capital Fund, LLC and a common stock sales agreement with JonesTrading International Services LLC as of March 31, 2019.

Financing Overview

Equity and Debt Financings

During 2018 and thus far in 2019, we entered into a $10 million loan facility and we issued a total of 0.8 million shares of common stock in the following equity transactions for an aggregate $1.8 million in gross proceeds.

- On June 27, 2018, the Company entered into the Horizon Credit Agreement with Horizon that provided $10 million in new capital. The Company drew down $10 million upon closing of the Horizon Credit Agreement on June 27, 2018. The Company anticipates that it will use the funding provided under the Horizon Credit Agreement for working capital and advancement of its product pipeline. The obligations under the Horizon Credit Agreement are secured by a first-priority security interest in substantially all assets of Celsion other than intellectual property assets. The obligations will bear interest at a rate calculated based on one-month LIBOR plus 7.625%. Payments under the loan agreement are interest only for the first twenty-four (24) months after loan closing, followed by a 24-month amortization period of principal and interest through the scheduled maturity date.

- On August 31, 2018, the Company entered into the Aspire Purchase Agreement with Aspire Capital Fund which provides that, upon the terms and subject to the conditions and limitations set forth therein, Aspire Capital is committed to purchase up to an aggregate of $15.0 million of shares of the Company's common stock over the 24-month term of the Aspire Purchase Agreement. On October 12, 2018, the Company filed with the SEC a prospectus supplement to the 2018 Shelf Registration Statement registering all of the shares of common stock that may be offered to Aspire Capital from time to time. The timing and amount of sales of the Company's common stock to Aspire Capital. Aspire Capital has no right to require any sales by the Company but is obligated to make purchases from the Company as directed by the Company in accordance with the Purchase Agreement. There are no limitations on use of proceeds, financial or business covenants, restrictions on future funding, rights of first refusal, participation rights, penalties or liquidated damages in the Purchase Agreement. In consideration for entering into the Purchase Agreement, concurrently with the execution of the Purchase Agreement, the Company issued to Aspire Capital 164,835 Commitment Shares. The Aspire Purchase Agreement may be terminated by the Company at any time, at its discretion, without any cost to the Company. Any proceeds from the Company receives under the Aspire Purchase Agreement are expected to be used for working capital and general corporate purposes. During 2018 and as of March 31, 2019, the Company sold and issued an aggregate of 964,835 shares under the Purchase Agreement, receiving approximately $2.1 million.

- On October 29, 2018, the Company and certain investors holding warrants to purchase 1.6 million shares collectively of the Company's common stock received in the February 27, 2017 Public Offering and the October 2017 Underwritten Offering, entered into warrant exchange agreements whereby the Company issued 820,714 shares collectively of common stock to these investors in exchange for the warrants. After the warrant exchange, warrants outstanding totaled 1.6 million with a weighted average exercise price of $5.75 per share. Approximately 1.2 million of these outstanding warrants with a strike price of $6.20 per share will expire on April 4, 2019.

- On December 4, 2018, the Company entered into a new Capital on Demand™ Sales Agreement with JonesTrading Institutional Services LLC, as sales agent ("JonesTrading"), pursuant to which the Company may offer and sell, from time to time, through JonesTrading shares of common stock having an aggregate offering price of up to $16.0 million. The Company intends to use the net proceeds from the offering, if any, for general corporate purposes, including research and development activities, capital expenditures and working capital. The Company is not obligated to sell any common stock under the Capital on Demand Agreement and, subject to the terms and conditions of the Capital on Demand Agreement, JonesTrading will use commercially reasonable efforts, consistent with its normal trading and sales practices and applicable state and federal law, rules and regulations and the rules of The NASDAQ Capital Market, to sell common stock from time to time based upon the Company's instructions, including any price, time or size limits or other customary parameters or conditions the Company may impose. Under the Capital on Demand Agreement, JonesTrading may sell common stock by any method deemed to be an "at the market offering" as defined in Rule 415 promulgated under the Securities Act of 1933, as amended. The Capital on Demand Agreement will terminate upon the earlier of (i) the sale of all shares of our common stock subject to the Sales Agreement, and (ii) the termination of the Capital on Demand Agreement by JonesTrading or Celsion. The Capital on Demand Agreement may be terminated by JonesTrading or the Company at any time upon 10 days' notice to the other party, or by JonesTrading at any time in certain circumstances, including the occurrence of a material adverse change in the Company. During 2018 and as of March 31, 2019, the Company sold and issued an aggregate of 122,186 shares under the Capital on Demand Agreement, receiving approximately $0.3 million.

Significant Accounting Policies

Our significant accounting policies are more fully described in Note 1 to our consolidated financial statements included in our 2018 Annual Report on Form 10-K for the year ended December 31, 2018 filed with the SEC on March 29, 2019.

In February 2016, the FASB issued Accounting Standards Update No. 2016-02, "Leases" - Topic 842 (ASC Topic 842), which requires that lessees recognize assets and liabilities for leases with lease terms greater than twelve months in the statement of financial position. Leases will be classified as either finance or operating, with classification affecting the pattern of expense recognition in the income statement. This update also requires improved disclosures to help users of financial statements better understand the amount, timing and uncertainty of cash flows arising from leases. The update became effective for fiscal years beginning after December 15, 2018, including interim reporting periods within that reporting period. The FASB subsequently issued the following amendments to ASC Topic 842, which have the same effective date and transition date of January 1, 2019:

- ASU No. 2018-10, *Codification Improvements to Topic 842*, *Leases*, which amends certain narrow aspects of the guidance issued in ASU 2016-02; and

- ASU No. 2018-11, *Leases (Topic 842): Targeted Improvements*, which allows for a transition approach to initially apply ASU 2016-02 at the adoption date and recognize a cumulative-effect adjustment to the opening balance of retained earnings in the period of adoption as well as an additional practical expedient for lessors to not separate non-lease components from the associated lease component.

We adopted Topic ASC 842 effective January 1, 2019 and elected to apply the available practical expedients and implement internal controls to enable the preparation of financial information on adoption. We have identified all of our leases which consist of the New Jersey corporate office lease and the Alabama lab facility lease and we estimate the adoption of this standard will result in the recognition of right-of-use assets of approximately $1.4, related operating lease liabilities of $1.5 million and reduced other liabilities by approximately $0.1 million on the consolidated balance sheets as of January 1, 2019 of approximately $1.5 million related to our operating lease commitments, with no material impact to the opening balance of retained earnings. See Note 15 for further discussions regarding the adoption of ASC Topic 842.

In August 2018, the SEC issued a final rule to simplify certain disclosure requirements. In addition, the amendments expanded the disclosure requirements on the analysis of stockholders' equity for interim financial statements. In August and September 2018, further amendments were issued to provide implementation guidance on adoption of the SEC rule and transition guidance for the new interim stockholders' equity disclosure. We adopted this amended guidance in the first quarter of 2019. The adoption of this amended guidance resulted in us disclosing the Condensed Consolidated Statements of Changes in Stockholders' Equity for the three months ending March 31, 2019 and 2018.

Material risks and uncertainties relating to our business and our industry are described in "Item 1A. Risk Factors" under "Part II: Other Information" included herein. As a clinical stage biopharmaceutical company, our business and our ability to execute our strategy to achieve our corporate goals are subject to numerous risks and uncertainties. Please refer to Note 3 of the Financial Statements contained in this Form 10-Q. Also refer to **Item IA, Risk Factors**, including, but not limited to, *"We will need to raise substantial additional capital to fund our planned future operations, and we may be unable to secure such capital without dilutive financing transactions. If we are not able to raise additional capital, we may not be able to complete the development, testing and commercialization of our product candidates."*

FINANCIAL REVIEW FOR THE THREE MONTHS ENDED MARCH 31, 2019 AND 2018

Results of Operations

For the three months ended March 31, 2019, our net loss was $2.4 million compared to a net loss of $4.5 million for the same period of 2018. With $23.8 million in cash and investments on hand at March 31, 2019, the Company believes it has sufficient capital resources to fund its operations into the fourth quarter of 2020.

	Three Months Ended March 31,			
	(In thousands)		Change Increase (Decrease)	
	2019	2018		%
Licensing Revenue:	$ 125	$ 125	$ -	-%
Operating Expenses:				
Clinical Research	1,780	1,884	(104)	(5.5)%
Chemistry, Manufacturing and Controls	988	857	131	15.3%
Research and development expenses	2,768	2,741	27	0.9%
General and administrative expenses	2,218	1,665	553	33.2%
Total operating expenses	4,986	4,406	580	13.2%
Loss from operations	$ (4,861)	$ (4,281)	$ (580)	13.5%

Comparison of the Three Months Ended March 31, 2019 and 2018

Licensing Revenue

In January 2013, we entered into a technology development contract with Hisun, pursuant to which Hisun paid us a non-refundable technology transfer fee of $5.0 million to support our development of ThermoDox® in the China territory. The $5.0 million received as a non-refundable payment from Hisun in the first quarter 2013 has been recorded to deferred revenue and will be amortized over the ten-year term of the agreement; therefore, we recorded deferred revenue of $125,000 in each of the first quarters of 2019 and 2018.

Research and Development Expenses

Research and development ("R&D") expenses increased by $0.1 million to $2.8 million in the first quarter of 2019 from $2.7 million in the same period of 2018. Costs associated with the OPTIMA Study decreased by $0.4 million to $0.9 million in the first quarter of 2019 compared to $1.3 million in the same period of 2018. This decrease is mostly attributable to lower investigator grant fees in the first quarter of 2019. Enrollment for the OPTIMA Study was completed during the third quarter of 2018. Costs associated the OVATION 2 Study of $0.1 million in the first quarter of 2019 were consistent with the same period of 2018. Regulatory costs were $0.2 million in the first quarter of 2019 compared to $0.1 million in the same period of 2018. Other clinical costs increased by $0.1 million to $0.6 million in the first quarter of 2019 compared to $0.5 million in the same period of 2018. This increase is attributable to an increase in personnel costs during the first quarter of 2019 compared to the same period of 2018. Costs associated with the production and of ThermoDox® were $0.3 million in each of the first quarters of 2019 and 2018. R&D costs associated with the development of GEN-1 to support the OVATION Studies remained relatively unchanged at $0.6 million in each of the first quarters of 2019 and 2018.

General and Administrative Expenses

General and administrative ("G&A") expenses increased to $2.2 million in the first quarter of 2019 compared to $1.7 million in the same period of 2018. This increase is mostly attributable to an increase in personnel costs of approximately $0.2 million coupled with a $0.3 million in non-cash stock compensation expense in the first quarter of 2019 compared to the same period of 2018.

Change in Earn-out Milestone Liability and Warrant Expense

The total aggregate purchase price for the acquisition of assets from EGEN included potential future earn-out payments contingent upon achievement of certain milestones. The difference between the aggregate $30.4 million in future earn-out payments and the $13.9 million included in the fair value of the acquisition consideration at June 20, 2014 was based on the Company's risk-adjusted assessment of each milestone and utilizing a discount rate based on the estimated time to achieve the milestone. These milestone payments are fair valued at the end of each quarter and any change in their value is recognized in the condensed consolidated financial statements.

On March 28, 2019, the Company and EGWU, Inc, entered into an amendment to the Asset Purchase Agreement discussed in Note 8. Pursuant to the Amended Asset Purchase Agreement, payment of the earnout milestone liability related to the Ovarian Cancer Indication of $12.4 million has been modified. The Company has the option to make the payment as follows:

a) $7.0 million in cash within 10 business days of achieving the milestone; or

b) $12.4 million in cash, common stock of the Company, or a combination of either, within one year of achieving the milestone.

The Company provided EGWU, Inc. 200,000 warrants to purchase common stock at a strike price of $0.01 per warrant share as consideration for entering into the amended agreement. These warrants shares have no expiration and were fair valued at $2.00 using the closing price of a share of Celsion stock on the date of issuance offset by the exercise price and recorded as an expense in the income statement and were classified as equity on the balance sheet.

At December 31, 2018, the Company fair valued the earn-out milestone liability at $8.9 million. At March 31, 2019, the Company fair valued the earnout milestone liability at $5.8 million and recognized a non-cash benefit of $3.1 million during the three months ended March 31, 2019 as a result of the change in fair value of the earnout milestone liability at December 31, 2019. In assessing the earnout milestone liability at March 31, 2019, the Company the fair valued each of the two payment options per the Amended Asset Purchase Agreement and weighted them at 80% and 20% probability for the $7.0 million and the $12.4 million payments, respectively.

As of March 31, 2018, and December 31, 2017, the Company fair valued these milestones at $12.8 million and $12.5 million, respectively, and recognized a non-cash charge of $270,195 during the three months ended March 31, 2018 as a result of the change in the fair value of these milestones from December 31, 2017.

Investment income and interest expense

The Company realized $0.1 million of interest income from its short-term investments during each of the first quarters of 2019 and 2018.

The Company entered into a new loan facility with Horizon Technology Finance Corporation on June 27, 2018. In connection with this debt facility the Company incurred $0.3 million in interest expense in the first quarter of 2019. The Company did not incur any interest expense during the same period of 2018.

Financial Condition, Liquidity and Capital Resources

Since inception we have incurred significant losses and negative cash flows from operations. We have financed our operations primarily through the net proceeds from the sales of equity, credit facilities and amounts received under our product licensing agreement with Yakult and our technology development agreement with Hisun. The process of developing and commercializing ThermoDox®, GEN-1 and other product candidates and technologies requires significant research and development work and clinical trial studies, as well as significant manufacturing and process development efforts. We expect these activities, together with our general and administrative expenses to result in significant operating losses for the foreseeable future. Our expenses have significantly and regularly exceeded our revenue, and we had an accumulated deficit of $276 million at March 31, 2019.

At March 31, 2019 we had total current assets of $24.9 million (including cash, cash equivalents and short-term investments and related interest receivable on short-term investments of $23.8 million) and current liabilities of $5.9 million, resulting in net working capital of $19.0 million. At December 31, 2018 we had total current assets of $28.1 million (including cash, cash equivalents and short-term investments and related interest receivable on short-term investments of $27.7 million) and current liabilities of $6.1 million, resulting in net working capital of $22.0 million. We have substantial future capital requirements to continue our research and development activities and advance our product candidates through various development stages. The Company believes these expenditures are essential for the commercialization of its technologies.

Net cash used in operating activities for the first three months of 2019 was $5.5 million. Net cash used in investing activities was $6.0 million during the first three months of 2019 as the Company invested liquid funds into short-term investments. Net cash provided by financing activities was $1.8 million during the first three months of 2019 net proceeds received through the sale of our common stock through the sale of equity under common stock purchase and sales facilities with Aspire Capital Fund, LLC. and JonesTrading International, LLC.

We expect to seek additional capital through further public or private equity offerings, debt financing, additional strategic alliance and licensing arrangements, collaborative arrangements, or some combination of these financing alternatives. If we raise additional funds through the issuance of equity securities, the percentage ownership of our stockholders could be significantly diluted, and the newly issued equity securities may have rights, preferences, or privileges senior to those of the holders of our common stock. If we raise funds through the issuance of debt securities, those securities may have rights, preferences, and privileges senior to those of our common stock. If we seek strategic alliances, licenses, or other alternative arrangements, such as arrangements with collaborative partners or others, we may need to relinquish rights to certain of our existing or future technologies, product candidates, or products we would otherwise seek to develop or commercialize on our own, or to license the rights to our technologies, product candidates, or products on terms that are not favorable to us. The overall status of the economic climate could also result in the terms of any equity offering, debt financing, or alliance, license, or other arrangement being even less favorable to us and our stockholders than if the overall economic climate were stronger. We also will continue to look for government sponsored research collaborations and grants to help offset future anticipated losses from operations and, to a lesser extent, interest income.

If adequate funds are not available through either the capital markets, strategic alliances, or collaborators, we may be required to delay or, reduce the scope of, or terminate our research, development, clinical programs, manufacturing, or commercialization efforts, or effect additional changes to our facilities or personnel, or obtain funds through other arrangements that may require us to relinquish some of our assets or rights to certain of our existing or future technologies, product candidates, or products on terms not favorable to us.

Off-Balance Sheet Arrangements and Contractual Obligations

None.

Item 3. QUANTITATIVE AND QUALITATIVE DISCLOSURE ABOUT MARKET RISK

The primary objective of our investment activities is to preserve our capital until it is required to fund operations while at the same time maximizing the income we receive from our investments without significantly increasing risk. Our cash flow and earnings are subject to fluctuations due to changes in interest rates in our investment portfolio. We maintain a portfolio of various issuers, types, and maturities. These securities are classified as available-for-sale and, consequently, are recorded on the condensed consolidated balance sheet at fair value with unrealized gains or losses reported as a component of accumulated other comprehensive loss included in stockholders' equity.

Item 4. CONTROLS AND PROCEDURES

We have carried out an evaluation, under the supervision and with the participation of management, including our principal executive officer and principal financial officer, of the effectiveness of the design and operation of our disclosure controls and procedures, as that term is defined in Rule 13a-15(e) under the Securities Exchange Act of 1934, as amended. Based on that evaluation, our principal executive officer and principal financial officer have concluded that, as of March 31, 2019, which is the end of the period covered by this report, our disclosure controls and procedures are effective at the reasonable assurance level in alerting them in a timely manner to material information required to be included in our periodic reports with the SEC.

The company implemented technology, processes and controls related to the recording of right-of-use assets and lease liabilities in connection with the adoption of ASC 842, "Leases," as described in the "Leases and Commitments" note of the financial statements. Otherwise, there were no changes in our internal control over financial reporting identified in connection with the evaluation that occurred during the period covered by this report that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Our management, including our chief executive officer and chief financial officer, does not expect that our disclosure controls and procedures or our internal control over financial reporting will prevent all error and all fraud. A control system, no matter how well conceived and operated, can provide only reasonable, not absolute, assurance that the objectives of the control system are met. Because of the inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that all control issues and instances of fraud, if any, within the company have been detected. These inherent limitations include the realities that judgments in decision-making can be faulty, and that breakdowns can occur because of simple errors or mistakes. Additionally, controls can be circumvented by the individual acts of some persons, by collusion of two or more people or by management override of the control. The design of any system of controls also is based in part upon certain assumptions about the likelihood of future events, and there can be no assurance that any design will succeed in achieving its stated goals under all potential future conditions. Over time, controls may become inadequate because of changes in conditions, or the degree of compliance with the policies or procedures may deteriorate. Because of the inherent limitations in a cost-effective control system, misstatements due to error or fraud may occur and not be detected.

PART II: OTHER INFORMATION

Item 1. Legal Proceedings

None.

Item 1A. Risk Factors

The following is a summary of the risk factors, uncertainties and assumptions that we believe are most relevant to our business. These are factors that, individually or in the aggregate, we think could cause our actual results to differ significantly from expected or historical results and our forward-looking statements. We note these factors for investors as permitted by Section 21E of the Securities Exchange Act of 1934, as amended and Section 27A of the Securities Act of 1933, as amended. Additional risks that we currently believe are immaterial may also impair our business operations. Investors should carefully consider the risks described below before making an investment decision and understand that it is not possible to predict or identify all such factors. Consequently, investors should not consider the following to be a complete discussion of all potential risks or uncertainties that may impact our business. Moreover, we operate in a competitive and rapidly changing environment. New factors emerge from time to time and it is not possible to predict the impact of all of these factors on our business, financial condition or results of operations. We undertake no obligation to publicly update forward-looking statements, whether as a result of new information, future events, or otherwise. The description provided in this Item 1A includes any material changes to and supersedes the description of the risk factors associated with our business previously disclosed in Item 1A of our Annual Report on Form 10-K for the fiscal year ended December 31, 2018 filed on March 29, 2019 with the SEC. In assessing these risks, investors should also refer to the other information contained or incorporated by reference in this Quarterly Report and our other filings made from time to time with the SEC.

RISKS RELATED TO OUR BUSINESS

We have a history of significant losses from operations and expect to continue to incur significant losses for the foreseeable future.

Since our inception, our expenses have substantially exceeded our revenue, resulting in continuing losses and an accumulated deficit of $276 million at March 31, 2019. For the year ended December 31, 2018 and the three months ended March 31, 2019, we incurred a net loss of $11.9 million, and $2.4 million, respectively. We currently have no product revenue and do not expect to generate any product revenue for the foreseeable future. Because we are committed to continuing our product research, development, clinical trial and commercialization programs, we will continue to incur significant operating losses unless and until we complete the development of ThermoDox®, GEN-1 and other new product candidates and these product candidates have been clinically tested, approved by the United States Food and Drug Administration (FDA) and successfully marketed. The amount of future losses is uncertain. Our ability to achieve profitability, if ever, will depend on, among other things, us or our collaborators successfully developing product candidates, obtaining regulatory approvals to market and commercialize product candidates, manufacturing any approved products on commercially reasonable terms, establishing a sales and marketing organization or suitable third-party alternatives for any approved product and raising sufficient funds to finance business activities. If we or our collaborators are unable to develop and commercialize one or more of our product candidates or if sales revenue from any product candidate that receives approval is insufficient, we will not achieve profitability, which could have a material adverse effect on our business, financial condition, results of operations and prospects.

Drug development is an inherently uncertain process with a high risk of failure at every stage of development. Our lead drug candidate failed to meet its primary endpoint in our earlier Phase III clinical trial.

On January 31, 2013, we announced that our lead product ThermoDox® in combination with radiofrequency ablation (RFA) failed to meet the primary endpoint of the Phase III clinical trial for primary liver cancer, known as the HEAT study. We have not completed our final analysis of the data and do not know the extent to which, if any, the failure of ThermoDox® to meet its primary endpoint in the Phase III trial could impact our other ongoing studies of ThermoDox® including a pivotal, double-blind, placebo-controlled Phase III trial of ThermoDox® in combination with RFA in primary liver cancer, known as the OPTIMA study, which we launched in the first half of 2014. The trial design of the OPTIMA study is based on the overall survival data from the post-hoc analysis of results from the HEAT study. ThermoDox® is also being evaluated in a Phase II clinical trial for recurrent chest wall breast cancer and other preclinical studies. In addition, we have initiated a Phase I dose-escalation clinical trial of GEN-1 in combination with the standard of care in neo-adjuvant ovarian cancer, known as the OVATION Study, and plan to expand our ovarian cancer development program to include a Phase I/II dose escalating trial evaluating GEN-1, known as the OVATION II Study, in ovarian cancer patients.

Preclinical testing and clinical trials are long, expensive and highly uncertain processes and failure can unexpectedly occur at any stage of clinical development, as evidenced by the failure of ThermoDox® to meet its primary endpoint in the HEAT study. Drug development is inherently risky and clinical trials take us several years to complete. The start or end of a clinical trial is often delayed or halted due to changing regulatory requirements, manufacturing challenges, required clinical trial administrative actions, slower than anticipated patient enrollment, changing standards of care, availability or prevalence of use of a comparator drug or required prior therapy, clinical outcomes including insufficient efficacy, safety concerns, or our own financial constraints. The results from preclinical testing or early clinical trials of a product candidate may not predict the results that will be obtained in later phase clinical trials of the product candidate. We, the FDA or other applicable regulatory authorities may suspend clinical trials of a product candidate at any time for various reasons, including a belief that subjects participating in such trials are being exposed to unacceptable health risks or adverse side effects. We may not have the financial resources to continue development of, or to enter into collaborations for, a product candidate if we experience any problems or other unforeseen events that delay or prevent regulatory approval of, or our ability to commercialize, product candidates. The failure of one or more of our drug candidates or development programs could have a material adverse effect on our business, financial condition and results of operations.

We will need to raise additional capital to fund our planned future operations, and we may be unable to secure such capital without dilutive financing transactions. If we are not able to raise additional capital, we may not be able to complete the development, testing and commercialization of our product candidates.

We have not generated significant revenue and have incurred significant net losses in each year since our inception. For the year ended December 31, 2018 and the three months ended March 31, 2019, we incurred a net loss of $11.9 million, and $2.4 million, respectively. We have incurred approximately $276 million of cumulative net losses. As of March 31, 2019, we had approximately $23.8 million in cash and short-term investments including interest receivable.

We have substantial future capital requirements to continue our research and development activities and advance our product candidates through various development stages. For example, ThermoDox® is being evaluated in a Phase III clinical trial in combination with RFA for the treatment of primary liver cancer and other preclinical studies. We completed a Phase I dose-escalation clinical trial of GEN-1 in combination with the standard of care in neo-adjuvant ovarian cancer in the third quarter of 2017 and expanded our clinical development program for GEN-1 into a follow-on Phase I/II trial for newly diagnosed ovarian cancer in 2018.

To complete the development and commercialization of our product candidates, we will need to raise substantial amounts of additional capital to fund our operations. Our future capital requirements will depend upon numerous unpredictable factors, including, without limitation, the cost, timing, progress and outcomes of clinical studies and regulatory reviews of our proprietary drug candidates, our efforts to implement new collaborations, licenses and strategic transactions, general and administrative expenses, capital expenditures and other unforeseen uses of cash. We do not have any committed sources of financing and cannot assure you that alternate funding will be available in a timely manner, on acceptable terms or at all. We may need to pursue dilutive equity financings, such as the issuance of shares of common stock, convertible debt or other convertible or exercisable securities. Such dilutive equity financings could dilute the percentage ownership of our current common stockholders and could significantly lower the market value of our common stock. In addition, a financing could result in the issuance of new securities that may have rights, preferences or privileges senior to those of our existing stockholders.

If we are unable to obtain additional capital on a timely basis or on acceptable terms, we may be required to delay, reduce or terminate our research and development programs and preclinical studies or clinical trials, if any, limit strategic opportunities or undergo corporate restructuring activities. We also could be required to seek funds through arrangements with collaborators or others that may require us to relinquish rights to some of our technologies, product candidates or potential markets or that could impose onerous financial or other terms. Furthermore, if we cannot fund our ongoing development and other operating requirements, particularly those associated with our obligations to conduct clinical trials under our licensing agreements, we will be in breach of these licensing agreements and could therefore lose our license rights, which could have material adverse effects on our business.

If we do not obtain or maintain FDA and foreign regulatory approvals for our drug candidates on a timely basis, or at all, or if the terms of any approval impose significant restrictions or limitations on use, we will be unable to sell those products and our business, results of operations and financial condition will be negatively affected.

To obtain regulatory approvals from the FDA and foreign regulatory agencies, we must conduct clinical trials demonstrating that our products are safe and effective. We may need to amend ongoing trials, or the FDA and/or foreign regulatory agencies may require us to perform additional trials beyond those we planned. The testing and approval process require substantial time, effort and resources, and generally takes a number of years to complete. The time to complete testing and obtaining approvals is uncertain, and the FDA and foreign regulatory agencies have substantial discretion, at any phase of development, to terminate clinical studies, require additional clinical studies or other testing, delay or withhold approval, and mandate product withdrawals, including recalls. In addition, our drug candidates may have undesirable side effects or other unexpected characteristics that could cause us or regulatory authorities to interrupt, delay or halt clinical trials and could result in a more restricted label or the delay or denial of regulatory approval by regulatory authorities.

Even if we receive regulatory approval of a product, the approval may limit the indicated uses for which the drug may be marketed. The failure to obtain timely regulatory approval of product candidates, the imposition of marketing limitations, or a product withdrawal would negatively impact our business, results of operations and financial condition. Even if we receive approval, we will be subject to ongoing regulatory obligations and continued regulatory review, which may result in significant additional expense and subject us to restrictions, withdrawal from the market, or penalties if we fail to comply with applicable regulatory requirements or if we experience unanticipated problems with our product candidates, when and if approved. Finally, even if we obtain FDA approval of any of our product candidates, we may never obtain approval or commercialize such products outside of the United States, given that we may be subject to additional or different regulatory burdens in other markets. This could limit our ability to realize their full market potential.

Our industry is highly regulated by the FDA and comparable foreign regulatory agencies. We must comply with extensive, strictly enforced regulatory requirements to develop, obtain, and maintain marketing approval for any of our product candidates.

Securing FDA or comparable foreign regulatory approval requires the submission of extensive preclinical and clinical data and supporting information for each therapeutic indication to establish the product candidate’s safety and efficacy for its intended use. It takes years to complete the testing of a new drug or biological product and development delays and/or failure can occur at any stage of testing. Any of our present and future clinical trials may be delayed, halted, not authorized, or approval of any of our products may be delayed or may not be obtained due to any of the following:

- any preclinical test or clinical trial may fail to produce safety and efficacy results satisfactory to the FDA or comparable foreign regulatory authorities;

- preclinical and clinical data can be interpreted in different ways, which could delay, limit or prevent marketing approval;

- negative or inconclusive results from a preclinical test or clinical trial or adverse events during a clinical trial could cause a preclinical study or clinical trial to be repeated or a development program to be terminated, even if other studies relating to the development program are ongoing or have been completed and were successful;

- the FDA or comparable foreign regulatory authorities can place a clinical hold on a trial if, among other reasons, it finds that subjects enrolled in the trial are or would be exposed to an unreasonable and significant risk of illness or injury;

- the facilities that we utilize, or the processes or facilities of third-party vendors, including without limitation the contract manufacturers who will be manufacturing drug substance and drug product for us or any potential collaborators, may not satisfactorily complete inspections by the FDA or comparable foreign regulatory authorities; and

- we may encounter delays or rejections based on changes in FDA policies or the policies of comparable foreign regulatory authorities during the period in which we develop a product candidate, or the period required for review of any final marketing approval before we are able to market any product candidate.

In addition, information generated during the clinical trial process is susceptible to varying interpretations that could delay, limit, or prevent marketing approval at any stage of the approval process. Moreover, early positive preclinical or clinical trial results may not be replicated in later clinical trials. As more product candidates within a particular class of drugs proceed through clinical development to regulatory review and approval, the amount and type of clinical data that may be required by regulatory authorities may increase or change. Failure to demonstrate adequately the quality, safety, and efficacy of any of our product candidates would delay or prevent marketing approval of the applicable product candidate. We cannot assure you that if clinical trials are completed, either we or our potential collaborators will submit applications for required authorizations to manufacture or market potential products or that any such application will be reviewed and approved by appropriate regulatory authorities in a timely manner, if at all.

New gene-based products for therapeutic applications are subject to extensive regulation by the FDA and comparable agencies in other countries. The precise regulatory requirements with which we will have to comply, now and in the future, are uncertain due to the novelty of the gene-based products we are developing.

The regulatory approval process for novel product candidates such as ours can be significantly more expensive and take longer than for other, better known or more extensively studied product candidates. Limited data exist regarding the safety and efficacy of DNA-based therapeutics compared with conventional therapeutics, and government regulation of DNA-based therapeutics is evolving. Regulatory requirements governing gene and cell therapy products have changed frequently and may continue to change in the future. The FDA has established the Office of Cellular, Tissue and Gene Therapies within its Center for Biologics Evaluation and Research (CBER), to consolidate the review of gene therapy and related products, and has established the Cellular, Tissue and Gene Therapies Advisory Committee to advise CBER in its review. It is difficult to determine how long it will take or how much it will cost to obtain regulatory approvals for our product candidates in either the U.S. or the European Union or how long it will take to commercialize our product candidates.

Adverse events or the perception of adverse events in the field of gene therapy generally, or with respect to our product candidates specifically, may have a particularly negative impact on public perception of gene therapy and result in greater governmental regulation, including future bans or stricter standards imposed on gene-based therapy clinical trials, stricter labeling requirements and other regulatory delays in the testing or approval of our potential products. For example, if we were to engage an NIH-funded institution to conduct a clinical trial, we may be subject to review by the NIH Office of Biotechnology Activities' Recombinant DNA Advisory Committee (the RAC). If undertaken, RAC can delay the initiation of a clinical trial, even if the FDA has reviewed the trial design and details and approved its initiation. Conversely, the FDA can put an investigational new drug (IND) application on a clinical hold even if the RAC has provided a favorable review or an exemption from in-depth, public review. Such committee and advisory group reviews and any new guidelines they promulgate may lengthen the regulatory review process, require us to perform additional studies, increase our development costs, lead to changes in regulatory positions and interpretations, delay or prevent approval and commercialization of our product candidates or lead to significant post-approval limitations or restrictions. Any increased scrutiny could delay or increase the costs of our product development efforts or clinical trials.

Even if our products receive regulatory approval, they may still face future development and regulatory difficulties. Government regulators may impose significant restrictions on a product's indicated uses or marketing or impose ongoing requirements for potentially costly post-approval studies. This governmental oversight may be particularly strict with respect to gene-based therapies.

Serious adverse events, undesirable side effects or other unexpected properties of our product candidates may be identified during development or after approval, which could lead to the discontinuation of our clinical development programs, refusal by regulatory authorities to approve our product candidates or, if discovered following marketing approval, revocation of marketing authorizations or limitations on the use of our product candidates thereby limiting the commercial potential of such product candidate.

As we continue our development of our product candidates and initiate clinical trials of our additional product candidates, serious adverse events, undesirable side effects or unexpected characteristics may emerge causing us to abandon these product candidates or limit their development to more narrow uses or subpopulations in which the serious adverse events, undesirable side effects or other characteristics are less prevalent, less severe or more acceptable from a risk-benefit perspective.

Even if our product candidates initially show promise in these early clinical trials, the side effects of drugs are frequently only detectable after they are tested in large, Phase 3 clinical trials or, in some cases, after they are made available to patients on a commercial scale after approval. Sometimes, it can be difficult to determine if the serious adverse or unexpected side effects were caused by the product candidate or another factor, especially in oncology subjects who may suffer from other medical conditions and be taking other medications. If serious adverse or unexpected side effects are identified during development and are determined to be attributed to our product candidate, we may be required to develop a Risk Evaluation and Mitigation Strategy (REMS) to mitigate those serious safety risks, which could impose significant distribution and use restrictions on our products.

In addition, drug-related side effects could also affect subject recruitment or the ability of enrolled subjects to complete the trial, result in potential product liability claims, reputational harm, withdrawal of approvals, a requirement to include additional warnings on the label or to create a medication guide outlining the risks of such side effects for distribution to patients. It can also result in patient harm, liability lawsuits, and reputational harm. Any of these occurrences could prevent us from achieving or maintaining market acceptance and may harm our business, financial condition and prospects significantly.

We do not expect to generate revenue for the foreseeable future.

We have devoted our resources to developing a new generation of products and will not be able to market these products until we have completed clinical trials and obtain all necessary governmental approvals. Our lead product candidate, ThermoDox® and the product candidates we purchased in our acquisition of EGEN, including GEN-1, are still in various stages of development and trials and cannot be marketed until we have completed clinical testing and obtained necessary governmental approval. Following our announcement on January 31, 2013 that the HEAT Study failed to meet its primary endpoint of progression free survival, we continued to follow the patients enrolled in the HEAT Study to the secondary endpoint, overall survival. Based on the overall survival data from the post-hoc analysis of results from the HEAT Study, we launched a pivotal, double-blind, placebo-controlled Phase III trial of ThermoDox® in combination with RFA in primary liver cancer, known as the OPTIMA Study, in the first half of 2014. GEN-1 is currently in an early stage of clinical development for the treatment of ovarian cancer. We conducted a Phase I dose-escalation clinical trial of GEN-1 in combination with the standard of care in neo-adjuvant ovarian cancer starting in the second half of 2015 and completing enrollment in 2017. We also expanded our ovarian cancer development program to include a Phase I/II dose escalating trial evaluating GEN-1 in ovarian cancer patients. Our delivery technology platforms, TheraPlas and TheraSilence, are in preclinical stages of development. Accordingly, our revenue sources are, and will remain, extremely limited until our product candidates are clinically tested, approved by the FDA or foreign regulatory agencies and successfully marketed. We cannot guarantee that any of our product candidates will be approved by the FDA or any foreign regulatory agency or marketed, successfully or otherwise, at any time in the foreseeable future or at all.

We may not successfully engage in future strategic transactions, which could adversely affect our ability to develop and commercialize product candidates, impact our cash position, increase our expense and present significant distractions to our management.

In the future, we may consider strategic alternatives intended to further the development of our business, which may include acquiring businesses, technologies or products, out- or in-licensing product candidates or technologies or entering into a business combination with another company. Any strategic transaction may require us to incur non-recurring or other charges, increase our near- and long-term expenditures and pose significant integration or implementation challenges or disrupt our management or business. These transactions would entail numerous operational and financial risks, including exposure to unknown liabilities, disruption of our business and diversion of our management's time and attention in order to manage a collaboration or develop acquired products, product candidates or technologies, incurrence of substantial debt or dilutive issuances of equity securities to pay transaction consideration or costs, higher than expected collaboration, acquisition or integration costs, write-downs of assets or goodwill or impairment charges, increased amortization expenses, difficulty and cost in facilitating the collaboration or combining the operations and personnel of any acquired business, impairment of relationships with key suppliers, manufacturers or customers of any acquired business due to changes in management and ownership and the inability to retain key employees of any acquired business. Accordingly, although there can be no assurance that we will undertake or successfully complete any transactions of the nature described above, any transactions that we do complete may be subject to the foregoing or other risks and have a material adverse effect on our business, results of operations, financial condition and prospects. Conversely, any failure to enter any strategic transaction that would be beneficial to us could delay the development and potential commercialization of our product candidates and have a negative impact on the competitiveness of any product candidate that reaches market.

Strategic transactions, such as acquisitions, partnerships and collaborations, including the EGEN asset acquisition, involve numerous risks, including:

- the failure of markets for the products of acquired businesses, technologies or product lines to develop as expected;
- uncertainties in identifying and pursuing acquisition targets;
- the challenges in achieving strategic objectives, cost savings and other benefits expected from acquisitions;
- the risk that the financial returns on acquisitions will not support the expenditures incurred to acquire such businesses or the capital expenditures needed to develop such businesses;
- difficulties in assimilating the acquired businesses, technologies or product lines;
- the failure to successfully manage additional business locations, including the additional infrastructure and resources necessary to support and integrate such locations;
- the existence of unknown product defects related to acquired businesses, technologies or product lines that may not be identified due to the inherent limitations involved in the due diligence process of an acquisition;
- the diversion of management's attention from other business concerns;
- risks associated with entering markets or conducting operations with which we have no or limited direct prior experience;
- risks associated with assuming the legal obligations of acquired businesses, technologies or product lines;
- risks related to the effect that internal control processes of acquired businesses might have on our financial reporting and management's report on our internal control over financial reporting;
- the potential loss of key employees related to acquired businesses, technologies or product lines; and
- the incurrence of significant exit charges if products or technologies acquired in business combinations are unsuccessful.

We may never realize the perceived benefits of the EGEN asset acquisition or potential future transactions. We cannot assure you that we will be successful in overcoming problems encountered in connection with any transactions, and our inability to do so could significantly harm our business, results of operations and financial condition. These transactions could dilute a stockholder's investment in us and cause us to incur debt, contingent liabilities and amortization/impairment charges related to intangible assets, all of which could materially and adversely affect our business, results of operations and financial condition. In addition, our effective tax rate for future periods could be negatively impacted by the EGEN asset acquisition or potential future transactions.

Our business depends on license agreements with third parties to permit us to use patented technologies. The loss of any of our rights under these agreements could impair our ability to develop and market our products.

Our success will depend, in a substantial part, on our ability to maintain our rights under license agreements granting us rights to use patented technologies. For instance, we are party to license agreements with Duke University, under which we have exclusive rights to commercialize medical treatment products and procedures based on Duke's thermo-sensitive liposome technology. The Duke University license agreement contains a license fee, royalty and/or research support provisions, testing and regulatory milestones, and other performance requirements that we must meet by certain deadlines. If we breach any provisions of the license and research agreements, we may lose our ability to use the subject technology, as well as compensation for our efforts in developing or exploiting the technology. Any such loss of rights and access to technology could have a material adverse effect on our business.

Further, we cannot guarantee that any patent or other technology rights licensed to us by others will not be challenged or circumvented successfully by third parties, or that the rights granted will provide adequate protection. We may be required to alter any of our potential products or processes or enter into a license and pay licensing fees to a third party or cease certain activities. There can be no assurance that we can obtain a license to any technology that we determine we need on reasonable terms, if at all, or that we could develop or otherwise obtain alternate technology. If a license is not available on commercially reasonable terms or at all, our business, results of operations, and financial condition could be significantly harmed, and we may be prevented from developing and commercializing the product. Litigation, which could result in substantial costs, may also be necessary to enforce any patents issued to or licensed by us or to determine the scope and validity of another's claimed proprietary rights.

If any of our pending patent applications do not issue, or are deemed invalid following issuance, we may lose valuable intellectual property protection.

The patent positions of pharmaceutical and biotechnology companies, such as ours, are uncertain and involve complex legal and factual issues. We own various U.S. and international patents and have pending U.S. and international patent applications that cover various aspects of our technologies. There can be no assurance that patents that have issued will be held valid and enforceable in a court of law through the entire patent term. Even for patents that are held valid and enforceable, the legal process associated with obtaining such a judgment is time consuming and costly. Additionally, issued patents can be subject to opposition, interferences or other proceedings that can result in the revocation of the patent or maintenance of the patent in amended form (and potentially in a form that renders the patent without commercially relevant or broad coverage). Further, our competitors may be able to circumvent and otherwise design around our patents. Even if a patent is issued and enforceable, because development and commercialization of pharmaceutical products can be subject to substantial delays, patents may expire early and provide only a short period of protection, if any, following the commercialization of products encompassed by our patents. We may have to participate in interference proceedings declared by the U.S. Patent and Trademark Office, which could result in a loss of the patent and/or substantial cost to us.

We have filed patent applications, and plan to file additional patent applications, covering various aspects of our technologies and our proprietary product candidates. There can be no assurance that the patent applications for which we apply would actually issue as patents or do so with commercially relevant or broad coverage. The coverage claimed in a patent application can be significantly reduced before the patent is issued. The scope of our claim coverage can be critical to our ability to enter into licensing transactions with third parties and our right to receive royalties from our collaboration partnerships. Since publication of discoveries in scientific or patent literature often lags behind the date of such discoveries, we cannot be certain that we were the first inventor of inventions covered by our patents or patent applications. In addition, there is no guarantee that we will be the first to file a patent application directed to an invention.

An adverse outcome in any judicial proceeding involving intellectual property, including patents, could subject us to significant liabilities to third parties, require disputed rights to be licensed from or to third parties or require us to cease using the technology in dispute. In those instances where we seek an intellectual property license from another, we may not be able to obtain the license on a commercially reasonable basis, if at all, thereby raising concerns on our ability to freely commercialize our technologies or products.

We rely on trade secret protection and other unpatented proprietary rights for important proprietary technologies, and any loss of such rights could harm our business, results of operations and financial condition.

We rely on trade secrets and confidential information that we seek to protect, in part, by confidentiality agreements with our corporate partners, collaborators, employees and consultants. We cannot assure you that these agreements are adequate to protect our trade secrets and confidential information or will not be breached or, if breached, we will have adequate remedies. Furthermore, others may independently develop substantially equivalent confidential and proprietary information or otherwise gain access to our trade secrets or disclose such technology. Any loss of trade secret protection or other unpatented proprietary rights could harm our business, results of operations and financial condition.

Our products may infringe patent rights of others, which may require costly litigation and, if we are not successful, could cause us to pay substantial damages or limit our ability to commercialize our products.

Our commercial success depends on our ability to operate without infringing the patents and other proprietary rights of third parties. There may be third party patents that relate to our products and technology. We may unintentionally infringe upon valid patent rights of third parties. Although we currently are not involved in any material litigation involving patents, a third-party patent holder may assert a claim of patent infringement against us in the future. Alternatively, we may initiate litigation against the third-party patent holder to request that a court declare that we are not infringing the third party's patent and/or that the third party's patent is invalid or unenforceable. If a claim of infringement is asserted against us and is successful, and therefore we are found to infringe, we could be required to pay damages for infringement, including treble damages if it is determined that we knew or became aware of such a patent and we failed to exercise due care in determining whether or not we infringed the patent. If we have supplied infringing products to third parties or have licensed third parties to manufacture, use or market infringing products, we may be obligated to indemnify these third parties for damages they may be required to pay to the patent holder and for any losses they may sustain.

We can also be prevented from selling or commercializing any of our products that use the infringing technology in the future, unless we obtain a license from such third party. A license may not be available from such third party on commercially reasonable terms or may not be available at all. Any modification to include a non-infringing technology may not be possible, or if possible, may be difficult or time-consuming to develop, and require revalidation, which could delay our ability to commercialize our products. Any infringement action asserted against us, even if we are ultimately successful in defending against such action, would likely delay the regulatory approval process of our products, harm our competitive position, be expensive and require the time and attention of our key management and technical personnel.

We rely on third parties to conduct all of our clinical trials. If these third parties are unable to carry out their contractual duties in a manner that is consistent with our expectations, comply with budgets and other financial obligations or meet expected deadlines, we may not receive certain development milestone payments or be able to obtain regulatory approval for or commercialize our product candidates in a timely or cost-effective manner.

We do not independently conduct clinical trials for our drug candidates. We rely, and expect to continue to rely, on third-party clinical investigators, clinical research organizations (CROs), clinical data management organizations and consultants to design, conduct, supervise and monitor our clinical trials.

Because we do not conduct our own clinical trials, we must rely on the efforts of others and have reduced control over aspects of these activities, including, the timing of such trials, the costs associated with such trials and the procedures that are followed for such trials. We do not expect to significantly increase our personnel in the foreseeable future and may continue to rely on third parties to conduct all of our future clinical trials. If we cannot contract with acceptable third parties on commercially reasonable terms or at all, if these third parties are unable to carry out their contractual duties or obligations in a manner that is consistent with our expectations or meet expected deadlines, if they do not carry out the trials in accordance with budgeted amounts, if the quality or accuracy of the clinical data they obtain is compromised due to their failure to adhere to our clinical protocols or for other reasons, or if they fail to maintain compliance with applicable government regulations and standards, our clinical trials may be extended, delayed or terminated or may become significantly more expensive, we may not receive development milestone payments when expected or at all, and we may not be able to obtain regulatory approval for or successfully commercialize our product candidates.

Despite our reliance on third parties to conduct our clinical trials, we are ultimately responsible for ensuring that each of our clinical trials is conducted in accordance with the general investigational plan and protocols for the trial. Moreover, the FDA requires clinical trials to be conducted in accordance with good clinical practices for conducting, recording and reporting the results of clinical trials to assure that data and reported results are credible and accurate and that the rights, integrity and confidentiality of clinical trial participants are protected. We also are required to register ongoing clinical trials and post the results of completed clinical trials on a government-sponsored database, ***ClinicalTrials.gov***, within certain timeframes. Failure to do so can result in fines, adverse publicity and civil and criminal sanctions. Our reliance on third parties that we do not control does not relieve us of these responsibilities and requirements. If we or a third party we rely on fails to meet these requirements, we may not be able to obtain, or may be delayed in obtaining, marketing authorizations for our drug candidates and will not be able to, or may be delayed in our efforts to, successfully commercialize our drug candidates. This could have a material adverse effect on our business, financial condition, results of operations and prospects.

Because we rely on third party manufacturing and supply partners, our supply of research and development, preclinical and clinical development materials may become limited or interrupted or may not be of satisfactory quantity or quality.

We rely on third party supply and manufacturing partners to supply the materials and components for, and manufacture, our research and development, preclinical and clinical trial drug supplies. We do not own manufacturing facilities or supply sources for such components and materials. There can be no assurance that our supply of research and development, preclinical and clinical development drugs and other materials will not be limited, interrupted, restricted in certain geographic regions or of satisfactory quality or continue to be available at acceptable prices. Suppliers and manufacturers must meet applicable manufacturing requirements and undergo rigorous facility and process validation tests required by FDA and foreign regulatory authorities in order to comply with regulatory standards, such as current Good Manufacturing Practices. In the event that any of our suppliers or manufacturers fails to comply with such requirements or to perform its obligations to us in relation to quality, timing or otherwise, or if our supply of components or other materials becomes limited or interrupted for other reasons, we may be forced to manufacture the materials ourselves, for which we currently do not have the capabilities or resources, or enter into an agreement with another third party, which we may not be able to do on reasonable terms, if at all.

Our business is subject to numerous and evolving state, federal and foreign regulations and we may not be able to secure the government approvals needed to develop and market our products.

Our research and development activities, pre-clinical tests and clinical trials, and ultimately the manufacturing, marketing and labeling of our products, are all subject to extensive regulation by the FDA and foreign regulatory agencies. Pre-clinical testing and clinical trial requirements and the regulatory approval process typically take years and require the expenditure of substantial resources. Additional government regulation may be established that could prevent or delay regulatory approval of our product candidates. Delays or rejections in obtaining regulatory approvals would adversely affect our ability to commercialize any product candidates and our ability to generate product revenue or royalties.

The FDA and foreign regulatory agencies require that the safety and efficacy of product candidates be supported through adequate and well-controlled clinical trials. If the results of pivotal clinical trials do not establish the safety and efficacy of our product candidates to the satisfaction of the FDA and other foreign regulatory agencies, we will not receive the approvals necessary to market such product candidates. Even if regulatory approval of a product candidate is granted, the approval may include significant limitations on the indicated uses for which the product may be marketed.

We are subject to the periodic inspection of our clinical trials, facilities, procedures and operations and/or the testing of our products by the FDA to determine whether our systems and processes, or those of our vendors and suppliers, are in compliance with FDA regulations. Following such inspections, the FDA may issue notices on Form 483 and warning letters that could cause us to modify certain activities identified during the inspection.

Failure to comply with the FDA and other governmental regulations can result in fines, unanticipated compliance expenditures, recall or seizure of products, total or partial suspension of production and/or distribution, suspension of the FDA's review of product applications, enforcement actions, injunctions and criminal prosecution. Under certain circumstances, the FDA also has the authority to revoke previously granted product approvals. Although we have internal compliance programs, if these programs do not meet regulatory agency standards or if our compliance is deemed deficient in any significant way, it could have a material adverse effect on the Company.

We are also subject to recordkeeping and reporting regulations. These regulations require, among other things, the reporting to the FDA of adverse events alleged to have been associated with the use of a product or in connection with certain product failures. Labeling and promotional activities also are regulated by the FDA. We must also comply with record keeping requirements as well as requirements to report certain adverse events involving our products. The FDA can impose other post-marketing controls on us as well as our products including, but not limited to, restrictions on sale and use, through the approval process, regulations and otherwise.

Many states in which we do or may do business, or in which our products may be sold, if at all, impose licensing, labeling or certification requirements that are in addition to those imposed by the FDA. There can be no assurance that one or more states will not impose regulations or requirements that have a material adverse effect on our ability to sell our products.

In many of the foreign countries in which we may do business or in which our products may be sold, we will be subject to regulation by national governments and supranational agencies as well as by local agencies affecting, among other things, product standards, packaging requirements, labeling requirements, import restrictions, tariff regulations, duties and tax requirements. There can be no assurance that one or more countries or agencies will not impose regulations or requirements that could have a material adverse effect on our ability to sell our products.

We have obtained Orphan Drug Designation for ThermoDox® and may seek Orphan Drug Designation for other product candidates, but we may be unsuccessful or may be unable to maintain the benefits associated with Orphan Drug Designation, including the potential for market exclusivity.

ThermoDox® has been granted orphan drug designation for primary liver cancer in both the U.S. and Europe. As part of our business strategy, we may seek Orphan Drug Designation for other product candidates, but we may be unsuccessful. Regulatory authorities in some jurisdictions, including the U.S. and Europe, may designate drugs for relatively small patient populations as orphan drugs. Under the Orphan Drug Act, the FDA may designate a drug as an orphan drug if it is a drug intended to treat a rare disease or condition, which is generally defined as a patient population of fewer than 200,000 individuals annually in the U.S., or a patient population greater than 200,000 in the U.S. where there is no reasonable expectation that the cost of developing the drug will be recovered from sales in the U.S.

Even though we have obtained Orphan Drug Designation for ThermoDox® and may obtain such designation for other product candidates in specific indications, we may not be the first to obtain marketing approval of these product candidates for the orphan-designated indication due to the uncertainties associated with developing pharmaceutical products. In addition, exclusive marketing rights in the U.S. may be limited if we seek approval for an indication broader than the orphan-designated indication or may be lost if the FDA later determines that the request for designation was materially defective or if the manufacturer is unable to assure sufficient quantities of the product to meet the needs of patients with the rare disease or condition. Further, even if we obtain orphan drug exclusivity for a product, that exclusivity may not effectively protect the product from competition because different drugs with different active moieties can be approved for the same condition. Even after an orphan product is approved, the FDA can subsequently approve the same drug with the same active moiety for the same condition if the FDA concludes that the later drug is safer, more effective or makes a major contribution to patient care. Orphan Drug Designation neither shortens the development time or regulatory review time of a drug nor gives the drug any advantage in the regulatory review or approval process. In addition, while we may seek Orphan Drug Designation for other product candidates, we may never receive such designations.

Fast Track designation may not actually lead to a faster development or regulatory review or approval process.

ThermoDox® has received U.S. FDA Fast Track Designation. However, we may not experience a faster development process, review, or approval compared to conventional FDA procedures. The FDA may withdraw our Fast Track designation if the FDA believes that the designation is no longer supported by data from our clinical or pivotal development program. Our Fast Track designation does not guarantee that we will qualify for or be able to take advantage of the FDA's expedited review procedures or that any application that we may submit to the FDA for regulatory approval will be accepted for filing or ultimately approved.

Legislative and regulatory changes affecting the healthcare industry could adversely affect our business.

Political, economic and regulatory influences are subjecting the healthcare industry to potential fundamental changes that could substantially affect our results of operations. There have been a number of government and private sector initiatives during the last several years to limit the growth of healthcare costs, including price regulation, competitive pricing, coverage and payment policies, comparative effectiveness of therapies, technology assessments and managed-care arrangements. For example, the Affordable Care Act, passed in 2010, enacted a number of reforms to expand access to health insurance while also reducing or constraining the growth of healthcare spending, enhancing remedies against fraud and abuse, adding new transparency requirements for healthcare industries, and imposing new taxes on fees on healthcare industry participants, among other policy reforms. Further, the 2016 Presidential and Congressional elections and subsequent developments have caused the future state of many core aspects of the current health care marketplace to be uncertain, as the new Presidential Administration and Congress have repeatedly expressed a desire to repeal all or portions of the Affordable Care Act. It is uncertain whether or when any legislative proposals will be adopted or what actions federal, state, or private payors for health care treatment and services may take in response to any healthcare reform proposals or legislation. We cannot predict the effect healthcare reforms may have on our business and we can offer no assurances that any of these reforms will not have a material adverse effect on our business. In addition, uncertainty remains regarding proposed significant reforms to the U.S. health care system.

Since its enactment, some of the provisions of the ACA have yet to be fully implemented, while certain provisions have been subject to judicial, congressional, and executive challenges. As a result, there have been delays in the implementation of, and action taken to repeal or replace, certain aspects of the ACA. The U.S. Supreme Court has upheld certain key aspects of the legislation, including a tax-based shared responsibility payment imposed on certain individuals who fail to maintain qualifying health coverage for all or part of a year, which is commonly known as the requirement that all individuals maintain health insurance coverage or pay a penalty, referred to as the "individual mandate." However, as a result of tax reform legislation passed in December 2017, the individual mandate has been eliminated effective January 1, 2019. According to the Congressional Budget Office, the repeal of the individual mandate will cause 13 million fewer Americans to be insured in 2027 and premiums in insurance markets may rise. Since January 2017, President Trump has signed two Executive Orders designed to delay the implementation of certain provisions of the ACA or otherwise circumvent some of the requirements for health insurance mandated by the ACA. One Executive Order directs federal agencies with authorities and responsibilities under the ACA to waive, defer, grant exemptions from, or delay the implementation of any provision of the ACA that would impose a fiscal or regulatory burden on states, individuals, healthcare providers, health insurers, or manufacturers of pharmaceuticals or medical devices. The second Executive Order terminates the cost-sharing subsidies that reimburse insurers under the ACA. Several state Attorneys General filed suit to stop the administration from terminating the subsidies, but their request for a restraining order was denied by a federal judge in California on October 25, 2017. The loss of the cost share reduction payments is expected to increase premiums on certain policies issued by qualified health plans under the ACA. Further, on June 14, 2018, U.S. Court of Appeals for the Federal Circuit ruled that the federal government was not required to pay more than $12 billion in ACA risk corridor payments to third-party payors who argued were owed to them. The effects of this gap in reimbursement on third-party payors, the viability of the ACA marketplace, providers, and potentially our business, are not yet known.

Moreover, we cannot predict what healthcare reform initiatives may be adopted in the future. Further, federal and state legislative and regulatory developments are likely, and we expect ongoing initiatives in the United States to increase pressure on drug pricing. Such reforms could have an adverse effect on anticipated revenues from reloxaliase and any other product candidates that we may successfully develop and for which we may obtain regulatory approval and may affect our overall financial condition and ability to develop product candidates.

We may fail to comply with evolving European and other privacy laws.

Since we conduct clinical trials in the European Economic Area ("EEA"), we are subject to additional European data-privacy laws. The General Data Protection Regulation, (EU) 2016/679 ("GDPR") became effective on May 25, 2018 and deals with the processing of personal data and on the free movement of such data. The GDPR imposes a broad range of strict requirements on companies subject to the GDPR, including requirements relating to having legal bases for processing personal information relating to identifiable individuals and transferring such information outside the EEA, including to the United States, providing details to those individuals regarding the processing of their personal information, keeping personal information secure, having data processing agreements with third parties who process personal information, responding to individuals' requests to exercise their rights in respect of their personal information, reporting security breaches involving personal data to the competent national data protection authority and affected individuals, appointing data protection officers, conducting data protection impact assessments, and record-keeping. The GDPR increases substantially the penalties to which we could be subject in the event of any non-compliance, including fines of up to 10,000,000 Euros or up to 2% of our total worldwide annual turnover for certain comparatively minor offenses, or up to 20,000,000 Euros or up to 4% of our total worldwide annual turnover for more serious offenses. Given the limited enforcement of the GDPR to date, we face uncertainty as to the exact interpretation of the new requirements on our trials and we may be unsuccessful in implementing all measures required by data protection authorities or courts in interpretation of the new law.

In particular, national laws of member states of the EU are in the process of being adapted to the requirements under the GDPR, thereby implementing national laws which may partially deviate from the GDPR and impose different obligations from country to country, so that we do not expect to operate in a uniform legal landscape in the EEA. Also, as it relates to processing and transfer of genetic data, the GDPR specifically allows national laws to impose additional and more specific requirements or restrictions, and European laws have historically differed quite substantially in this field, leading to additional uncertainty. Further, the impact of the impending "Brexit", (whereby the United Kingdom is planning to leave the EEA in March of 2019), either with or without a "deal" is uncertain and cannot be predicted at this time.

In the event we continue to conduct clinical trials in the EEA, we must also ensure that we maintain adequate safeguards to enable the transfer of personal data outside of the EEA, in particular to the United States, in compliance with European data protection laws. We expect that we will continue to face uncertainty as to whether our efforts to comply with our obligations under European privacy laws will be sufficient. If we are investigated by a European data protection authority, we may face fines and other penalties. Anype1 such investigation or charges by European data protection authorities could have a negative effect on our existing business and on our ability to attract and retain new clients or pharmaceutical partners. We may also experience hesitancy, reluctance, or refusal by European or multi-national clients or pharmaceutical partners to continue to use our products and solutions due to the potential risk exposure as a result of the current (and, in particular, future) data protection obligations imposed on them by certain data protection authorities in interpretation of current law, including the GDPR. Such clients or pharmaceutical partners may also view any alternative approaches to compliance as being too costly, too burdensome, too legally uncertain, or otherwise objectionable and therefore decide not to do business with us. Any of the foregoing could materially harm our business, prospects, financial condition and results of operations

The success of our products may be harmed if the government, private health insurers and other third-party payers do not provide sufficient coverage or reimbursement.

Our ability to commercialize our new cancer treatment systems successfully will depend in part on the extent to which reimbursement for the costs of such products and related treatments will be available from government health administration authorities, private health insurers and other third-party payors. The reimbursement status of newly approved medical products is subject to significant uncertainty. We cannot guarantee that adequate third-party insurance coverage will be available for us to establish and maintain price levels sufficient for us to realize an appropriate return on our investment in developing new therapies. Government, private health insurers and other third-party payors are increasingly attempting to contain healthcare costs by limiting both coverage and the level of reimbursement for new therapeutic products approved for marketing by the FDA. For example, Congress passed the Affordable Care Act in 2010 which enacted a number of reforms to expand access to health insurance while also reducing or constraining the growth of healthcare spending, enhancing remedies against fraud and abuse, adding new transparency requirements for healthcare industries, and imposing new taxes on fees on healthcare industry participants, among other policy reforms. Federal agencies, Congress and state legislatures have continued to show interest in implementing cost containment programs to limit the growth of health care costs, including price controls, restrictions on reimbursement and other fundamental changes to the healthcare delivery system. In addition, in recent years, Congress has enacted various laws seeking to reduce the federal debt level and contain healthcare expenditures, and the Medicare and other healthcare programs are frequently identified as potential targets for spending cuts. New government legislation or regulations related to pricing or other fundamental changes to the healthcare delivery system as well as a government or third-party payer decision not to approve pricing for, or provide adequate coverage or reimbursement of, our product candidates hold the potential to severely limit market opportunities of such products. Accordingly, even if coverage and reimbursement are provided by government, private health insurers and third-party payors for uses of our products, market acceptance of these products would be adversely affected if the reimbursement available proves to be unprofitable for health care providers.

Our products may not achieve sufficient acceptance by the medical community to sustain our business.

The commercial success of our products will depend upon their acceptance by the medical community and third-party payors as clinically useful, cost effective and safe. Any of our drug candidates or similar product candidates being investigated by our competitors may prove not to be effective in trial or in practice, cause adverse events or other undesirable side effects. Our testing and clinical practice may not confirm the safety and efficacy of our product candidates or even if further testing and clinical practice produce positive results, the medical community may view these new forms of treatment as effective and desirable or our efforts to market our new products may fail. Market acceptance depends upon physicians and hospitals obtaining adequate reimbursement rates from third-party payors to make our products commercially viable. Any of these factors could have an adverse effect on our business, financial condition and results of operations.

The commercial potential of a drug candidate in development is difficult to predict. If the market size for a new drug is significantly smaller than we anticipate, it could significantly and negatively impact our revenue, results of operations and financial condition.

It is very difficult to predict the commercial potential of product candidates due to important factors such as safety and efficacy compared to other available treatments, including potential generic drug alternatives with similar efficacy profiles, changing standards of care, third party payor reimbursement standards, patient and physician preferences, the availability of competitive alternatives that may emerge either during the long drug development process or after commercial introduction, and the availability of generic versions of our successful product candidates following approval by government health authorities based on the expiration of regulatory exclusivity or our inability to prevent generic versions from coming to market by asserting our patents. If due to one or more of these risks the market potential for a drug candidate is lower than we anticipated, it could significantly and negatively impact the revenue potential for such drug candidate and would adversely affect our business, financial condition and results of operations.

Several of our current clinical trials are being conducted outside the United States, and the FDA may not accept data from trials conducted in foreign locations.

Several of our current clinical trials are being conducted outside the United States. Although the FDA may accept data from clinical trials conducted outside the United States, acceptance of these data is subject to certain conditions imposed by the FDA. For example, the clinical trial must be well designed and conducted and performed by qualified investigators in accordance with ethical principles. The trial population must also adequately represent the U.S. population, and the data must be applicable to the U.S. population and U.S. medical practice in ways that the FDA deems clinically meaningful. In general, the patient population for any clinical trials conducted outside of the United States must be representative of the population for whom we intend to label the product in the United States. In addition, while these clinical trials are subject to the applicable local laws, FDA acceptance of the data will be dependent upon its determination that the trials also complied with all applicable U.S. laws and regulations. We cannot assure you that the FDA will accept data from trials conducted outside of the United States. If the FDA does not accept the data from such clinical trials, it would likely result in the need for additional trials, which would be costly and time-consuming and delay or permanently halt our development of our product candidates.

We have no internal sales or marketing capability. If we are unable to create sales, marketing and distribution capabilities or enter into alliances with others possessing such capabilities to perform these functions, we will not be able to commercialize our products successfully.

We currently have no sales, marketing or distribution capabilities. We intend to market our products, if and when such products are approved for commercialization by the FDA and foreign regulatory agencies, either directly or through other strategic alliances and distribution arrangements with third parties. If we decide to market our products directly, we will need to commit significant financial and managerial resources to develop a marketing and sales force with technical expertise and with supporting distribution, administration and compliance capabilities. If we rely on third parties with such capabilities to market our products, we will need to establish and maintain partnership arrangements, and there can be no assurance that we will be able to enter into third-party marketing or distribution arrangements on acceptable terms or at all. To the extent that we do enter into such arrangements, we will be dependent on our marketing and distribution partners. In entering into third-party marketing or distribution arrangements, we expect to incur significant additional expenses and there can be no assurance that such third parties will establish adequate sales and distribution capabilities or be successful in gaining market acceptance for our products and services.

Technologies for the treatment of cancer are subject to rapid change, and the development of treatment strategies that are more effective than our technologies could render our technologies obsolete.

Various methods for treating cancer currently are, and in the future, are expected to be, the subject of extensive research and development. Many possible treatments that are being researched, if successfully developed, may not require, or may supplant, the use of our technologies. The successful development and acceptance of any one or more of these alternative forms of treatment could render our technology obsolete as a cancer treatment method.

We may not be able to hire or retain key officers or employees that we need to implement our business strategy and develop our product candidates and business, including those purchased in the EGEN asset acquisition.

Our success depends significantly on the continued contributions of our executive officers, scientific and technical personnel and consultants, including those retained in the EGEN asset acquisition, and on our ability to attract additional personnel as we seek to implement our business strategy and develop our product candidates and businesses. Our operations associated with the EGEN asset acquisition are located in Huntsville, Alabama. Key employees may depart if we fail to successfully manage this additional business location or in relation to any uncertainties or difficulties of integration with Celsion. We cannot guarantee that we will retain key employees to the same extent that we and EGEN retained each of our own employees in the past, which could have a negative impact on our business, results of operations and financial condition. Our integration of EGEN and ability to operate in the fields we acquired from EGEN may be more difficult if we lose key employees. Additionally, during our operating history, we have assigned many essential responsibilities to a relatively small number of individuals. However, as our business and the demands on our key employees expand, we have been, and will continue to be, required to recruit additional qualified employees. The competition for such qualified personnel is intense, and the loss of services of certain key personnel or our inability to attract additional personnel to fill critical positions could adversely affect our business. Further, we do not carry “key man” insurance on any of our personnel. Therefore, loss of the services of key personnel would not be ameliorated by the receipt of the proceeds from such insurance.

Our success will depend in part on our ability to grow and diversify, which in turn will require that we manage and control our growth effectively.

Our business strategy contemplates growth and diversification. Our ability to manage growth effectively will require that we continue to expend funds to improve our operational, financial and management controls, reporting systems and procedures. In addition, we must effectively expand, train and manage our employees. We will be unable to manage our business effectively if we are unable to alleviate the strain on resources caused by growth in a timely and successful manner. There can be no assurance that we will be able to manage our growth and a failure to do so could have a material adverse effect on our business.

We face intense competition and the failure to compete effectively could adversely affect our ability to develop and market our products.

There are many companies and other institutions engaged in research and development of various technologies for cancer treatment products that seek treatment outcomes similar to those that we are pursuing. We believe that the level of interest by others in investigating the potential of possible competitive treatments and alternative technologies will continue and may increase. Potential competitors engaged in all areas of cancer treatment research in the U.S. and other countries include, among others, major pharmaceutical, specialized technology companies, and universities and other research institutions. Most of our current and potential competitors have substantially greater financial, technical, human and other resources, and may also have far greater experience than do we, both in pre-clinical testing and human clinical trials of new products and in obtaining FDA and other regulatory approvals. One or more of these companies or institutions could succeed in developing products or other technologies that are more effective than the products and technologies that we have been or are developing, or which would render our technology and products obsolete and non-competitive. Furthermore, if we are permitted to commence commercial sales of any of our products, we will also be competing, with respect to manufacturing efficiency and marketing, with companies having substantially greater resources and experience in these areas.

We may be subject to significant product liability claims and litigation.

Our business exposes us to potential product liability risks inherent in the testing, manufacturing and marketing of human therapeutic products. We presently have product liability insurance limited to $10 million per incident and $10 million annually. If we were to be subject to a claim in excess of this coverage or to a claim not covered by our insurance and the claim succeeded, we would be required to pay the claim with our own limited resources, which could have a severe adverse effect on our business. Whether or not we are ultimately successful in any product liability litigation, such litigation would harm the business by diverting the attention and resources of our management, consuming substantial amounts of our financial resources and by damaging our reputation. Additionally, we may not be able to maintain our product liability insurance at an acceptable cost, if at all.

Our internal computer systems, or those of our CROs or other contractors or consultants, may fail or suffer security breaches, which could result in a material disruption of our product development programs.

Despite the implementation of security measures, our internal computer systems and those of our CROs and other contractors and consultants are vulnerable to damage from computer viruses, unauthorized access, natural disasters, terrorism, war and telecommunication and electrical failures. Such events could cause interruptions of our operations. For instance, the loss of preclinical data or data from any clinical trial involving our product candidates could result in delays in our development and regulatory filing efforts and significantly increase our costs. To the extent that any disruption or privacy or security breach were to result in a loss of, or damage to, our data, or inappropriate disclosure of confidential or proprietary information, we could be subject to reputational harm, monetary fines, civil suits, civil penalties or criminal sanctions and requirements to disclose the breach, and other forms of liability and the development of our product candidates could be delayed.

RISKS RELATED TO OUR SECURITIES

The market price of our common stock has been, and may continue to be volatile and fluctuate significantly, which could result in substantial losses for investors and subject us to securities class action litigation.

The trading price for our common stock has been, and we expect it to continue to be, volatile. The price at which our common stock trades depends upon a number of factors, including our historical and anticipated operating results, our financial situation, announcements of technological innovations or new products by us or our competitors, our ability or inability to raise the additional capital we may need and the terms on which we raise it, and general market and economic conditions. Some of these factors are beyond our control. Broad market fluctuations may lower the market price of our common stock and affect the volume of trading in our stock, regardless of our financial condition, results of operations, business or prospect. The closing price of our common stock as reported on The NASDAQ Capital Market had a high price of $3.48 and a low price of $1.35 in the 52-week period ended December 31, 2018, and a high price of $2.46 and a low price of $1.67 from January 1, 2019 through May 14, 2019. Among the factors that may cause the market price of our common stock to fluctuate are the risks described in this "Risk Factors" section and other factors, including:

- results of preclinical and clinical studies of our product candidates or those of our competitors;

- regulatory or legal developments in the U.S. and other countries, especially changes in laws and regulations applicable to our product candidates;
- actions taken by regulatory agencies with respect to our product candidates, clinical studies, manufacturing process or sales and marketing terms;
- introductions and announcements of new products by us or our competitors, and the timing of these introductions or announcements;
- announcements by us or our competitors of significant acquisitions or other strategic transactions or capital commitments;
- fluctuations in our quarterly operating results or the operating results of our competitors;
- variance in our financial performance from the expectations of investors;
- changes in the estimation of the future size and growth rate of our markets;
- changes in accounting principles or changes in interpretations of existing principles, which could affect our financial results;
- failure of our products to achieve or maintain market acceptance or commercial success;
- conditions and trends in the markets we serve;
- changes in general economic, industry and market conditions;
- success of competitive products and services;
- changes in market valuations or earnings of our competitors;
- changes in our pricing policies or the pricing policies of our competitors;
- changes in legislation or regulatory policies, practices or actions;
- the commencement or outcome of litigation involving our company, our general industry or both;
- recruitment or departure of key personnel;
- changes in our capital structure, such as future issuances of securities or the incurrence of additional debt;
- actual or anticipated changes in earnings estimates or changes in stock market analyst recommendations regarding our common stock, other comparable companies or our industry generally;
- actual or expected sales of our common stock by our stockholders;
- acquisitions and financings, including the EGEN asset acquisition; and
- the trading volume of our common stock.

In addition, the stock markets, in general, The NASDAQ Capital Market and the market for pharmaceutical companies in particular, may experience a loss of investor confidence. Such loss of investor confidence may result in extreme price and volume fluctuations in our common stock that are unrelated or disproportionate to the operating performance of our business, financial condition or results of operations. These broad market and industry factors may materially harm the market price of our common stock and expose us to securities class action litigation. Such litigation, even if unsuccessful, could be costly to defend and divert management's attention and resources, which could further materially harm our financial condition and results of operations.

Future sales of our common stock in the public market could cause our stock price to fall.

Sales of a substantial number of shares of our common stock in the public market, or the perception that these sales might occur, could depress the market price of our common stock and could impair our ability to raise capital through the sale of additional equity securities. As of May 14, 2019, we had 20,482,720 shares of common stock outstanding, all of which, other than shares held by our directors and certain officers, were eligible for sale in the public market, subject in some cases to compliance with the requirements of Rule 144, including the volume limitations and manner of sale requirements. In addition, all of the shares of common stock issuable upon exercise of warrants will be freely tradable without restriction or further registration upon issuance.

Our stockholders may experience significant dilution as a result of future equity offerings or issuances and exercise of outstanding options and warrants.

In order to raise additional capital or pursue strategic transactions, we may in the future offer, issue or sell additional shares of our common stock or other securities convertible into or exchangeable for our common stock, including the issuance of common stock in relation to the achievement, if any, of milestones triggering our payment of earn-out consideration in connection with the EGEN asset acquisition. Our stockholders may experience significant dilution as a result of future equity offerings or issuances. Investors purchasing shares or other securities in the future could have rights superior to existing stockholders. As of May 14, 2019, we have a significant number of securities convertible into, or allowing the purchase of, our common stock, including 626,912 shares of common stock issuable upon exercise of warrants outstanding, 3,964,892 options to purchase shares of our common stock and restricted stock awards outstanding, and 880,007 shares of common stock reserved for future issuance under our stock incentive plan.

The adverse capital and credit market conditions could affect our liquidity.

Adverse capital and credit market conditions could affect our ability to meet liquidity needs, as well as our access to capital and cost of capital. The capital and credit markets have experienced extreme volatility and disruption in recent years. Our results of operations, financial condition, cash flows and capital position could be materially adversely affected by continued disruptions in the capital and credit markets.

Our ability to use net operating losses to offset future taxable income are subject to certain limitations.

On December 22, 2017, the President of the United States signed into law the Tax Reform Act. The Tax Reform Act significantly changes U.S. tax law by, among other things, lowering corporate income tax rates, implementing a quasi-territorial tax system, providing a one-time transition toll charge on foreign earnings, creating a new limitation on the deductibility of interest expenses and modifying the limitation on officer compensation. The Tax Reform Act permanently reduces the U.S. corporate income tax rate from a maximum of 35% to a flat 21% rate, effective January 1, 2018. We currently have significant net operating losses (NOLs) that may be used to offset future taxable income. In general, under Section 382 of the Internal Revenue Code of 1986, as amended (the Code), a corporation that undergoes an "ownership change" is subject to limitations on its ability to utilize its pre-change NOLs to offset future taxable income. During 2018, 2017 and years prior, we performed analyses to determine if there were changes in ownership, as defined by Section 382 of the Internal Revenue Code that would limit our ability to utilize certain net operating loss and tax credit carry forwards. We determined we experienced ownership changes, as defined by Section 382, in connection with certain common stock offerings in 2011, 2013, 2015, 2017 and 2018. As a result, the utilization of our federal tax net operating loss carry forwards generated prior to the ownership changes is limited. Future changes in our stock ownership, some of which are outside of our control, could result in an ownership change under Section 382 of the Code, which would significantly limit our ability to utilize NOLs to offset future taxable income.

We have never paid cash dividends on our common stock in the past and do not anticipate paying cash dividends on our common stock in the foreseeable future.

We have never declared or paid cash dividends on our common stock. We do not anticipate paying any cash dividends on our common stock in the foreseeable future. We currently intend to retain all available funds and any future earnings to fund the development and growth of our business. As a result, capital appreciation, if any, of our common stock will be the sole source of gain for the foreseeable future for holders of our common stock.

Anti-takeover provisions in our charter documents and Delaware law could prevent or delay a change in control.

Our certificate of incorporation and bylaws may discourage, delay or prevent a merger or acquisition that a stockholder may consider favorable by authorizing the issuance of "blank check" preferred stock. This preferred stock may be issued by our Board of Directors on such terms as it determines, without further stockholder approval. Therefore, our Board of Directors may issue such preferred stock on terms unfavorable to a potential bidder in the event that our Board of Directors opposes a merger or acquisition. In addition, our Board of Directors may discourage such transactions by increasing the amount of time necessary to obtain majority representation on our Board of Directors. Certain other provisions of our bylaws and of Delaware law may also discourage, delay or prevent a third party from acquiring or merging with us, even if such action were beneficial to some, or even a majority, of our stockholders.

Item 2. Unregistered Sales of Equity Securities and Use of Proceeds.

None.

Item 3. Defaults Upon Senior Securities.

None.

Item 4. Mine Safety Disclosures.

Not applicable.

Item 5. Other Information.

None.

Item 6. Exhibits.

2.1	Amendment to Asset Purchase Agreement between Celsion Corporation and EGWU, Inc., dated March 28, 2019 incorporated herein by reference to Exhibit 10.1 to the Current Report on Form 8-K of the Company filed on April 1, 2019.
4.1+	Warrant to purchase Shares of Common Stock of Celsion Corporation between Celsion Corporation and EGWU, Inc., dated March 28, 2019.
10.1+	Second Amendment to Lease Agreement, dated January 9, 2019, by and between Celsion Corporation and Lenox Drive Office Park, LLC, successor in interest to Brandywine Operating Partnership, L.P.
31.1+	Certification of Chief Executive Officer pursuant to Rule 13a-14(a)/15d-14(a), as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
31.2+	Certification of Chief Financial Officer pursuant to Rule 13a-14(a)/15d-14(a), as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
32.1*	Certification pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
+	Filed herewith.
101**	The following materials from the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2018, formatted in XBRL (Extensible Business Reporting Language): (i) the unaudited Consolidated Balance Sheets, (ii) the unaudited Consolidated Statements of Operations, (iii) the unaudited Consolidated Statements of Comprehensive Loss, (iv) the unaudited Consolidated Statements of Cash Flows, (v) the unaudited Consolidated Statements of Change in Stockholders' Equity (Deficit), and (vi) Notes to Consolidated Financial Statements.
*	Exhibit 32.1 is being furnished and shall not be deemed to be "filed" for purposes of Section 18 of the Securities Exchange Act of 1934, as amended, or otherwise subject to the liability of that section, nor shall such exhibit be deemed to be incorporated by reference in any registration statement or other document filed under the Securities Act of 1933, as amended, or the Securities Exchange Act, except as otherwise stated in such filing.
**	XBRL information is filed herewith.

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned thereunto duly authorized.

May 15, 2019	CELSION CORPORATION
	Registrant
	By: */s/ Jeffrey W. Church* Jeffrey W. Church Executive Vice President and Chief Financial Officer
	By: */s/ Michael H. Tardugno* Michael H. Tardugno Chairman, President and Chief Executive Officer

WARRANT TO PURCHASE COMMON STOCK

THIS WARRANT AND THE SHARES OF CAPITAL STOCK ISSUED UPON ANY EXERCISE HEREOF HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED (THE “SECURITIES ACT”), OR ANY APPLICABLE STATE SECURITIES LAWS AND MAY NOT BE SOLD OR OTHERWISE TRANSFERRED TO ANY PERSON, INCLUDING A PLEDGEE, UNLESS (1) EITHER (A) A REGISTRATION STATEMENT WITH RESPECT THERETO SHALL BE EFFECTIVE UNDER THE SECURITIES ACT, OR (B) THE COMPANY SHALL HAVE RECEIVED AN OPINION OF COUNSEL SATISFACTORY TO THE COMPANY THAT AN EXEMPTION FROM REGISTRATION UNDER THE SECURITIES ACT IS AVAILABLE, AND (2) THERE SHALL HAVE BEEN COMPLIANCE WITH ALL APPLICABLE STATE SECURITIES OR “BLUE SKY” LAWS.

Warrant -No. 2019-001 Issue Date: March 28, 2019	Warrant to Purchase 200,000 Shares of Common Stock

WARRANT TO PURCHASE

COMMON STOCK

OF

CELSION CORPORATION

(A DELAWARE CORPORATION)

Celsion Corporation, a Delaware corporation (the “Company”), for value received, hereby certifies that EGWU, Inc. or its registered assigns (the “Holder”), is entitled, upon the terms and subject to the limitations on exercise and the conditions hereinafter set forth, at any time on or after March 28, 2019 (the “Initial Exercise Date”) until this Warrant is exercised in full (the “Termination Date”), to purchase from the Company, 200,000 shares of the Company’s Common Stock, par value $0.01 per share (the “Common Stock”), at a purchase price per share of Common Stock of $0.01 per share (the “Exercise Price”).

This Warrant to Purchase Common Stock (this “Warrant”) is one of a series of warrants (collectively, the “Warrants”). The terms of the Warrants (including this Warrant) are and will be identical except as to the name of the Holder thereof, the number of shares of Common Stock exercisable by such holder and the date of issuance thereof.

1. **Exercise.**

1.1. Manner of Exercise; Payment in Cash. This Warrant may be exercised by the Holder, in whole or in part, by surrendering this Warrant, with the purchase form appended hereto as Exhibit A duly executed by the Holder, at the principal office of the Company, or at such other place as the Company may designate, accompanied by payment in full of the Exercise Price payable in respect of the number of shares of Common Stock purchased upon such exercise. Payment of the Exercise Price shall be in cash or by certified or official bank check payable to the order of the Company.

1.2. Effectiveness. Each exercise of this Warrant shall be deemed to have been effected immediately prior to the close of business on the day on which this Warrant shall have been surrendered to the Company as provided in Section 1.1 above. At such time, the person or persons in whose name or names any certificates for Common Stock shall be issuable upon such exercise as provided in Section 1.3 below shall be deemed to have become the holder or holders of record of the Common Stock represented by such certificates.

1.3. Delivery of Certificates. As soon as practicable after the exercise of this Warrant in full or in part, and in any event within thirty (30) business days thereafter, the Company at its sole expense will cause to be issued in the name of, and delivered to, the Holder, or, subject to the terms and conditions hereof, as such Holder may direct:

(a) a certificate or certificates for the number of full shares of Common Stock to which such Holder shall be entitled upon such exercise plus, in lieu of any fractional share to which such Holder would otherwise be entitled, cash in an amount determined pursuant to Section 1.4 hereof, and

(b) in case such exercise is in part only, a new warrant or warrants (dated the date hereof) of like tenor, calling in the aggregate on the face or faces thereof for the number of shares of Common Stock (without giving effect to any adjustment therein) equal to the number of such shares called for on the face of this Warrant minus the number of such shares purchased by the Holder upon such exercise as provided in Section 1.1 above.

1.4. Fractional Shares. The Company shall not be required upon the exercise of this Warrant to issue any fractional shares but shall make an adjustment therefor in cash on the basis of the fair market value of a share of such Common Stock determined pursuant to Section 1.5(c) herein.

1.5. Right to Convert Warrant into Stock: Net Issuance.

(a) Right to Convert. In addition to and without limiting the rights of the Holder under the terms of this Warrant, the Holder shall have the right to convert this Warrant or any portion thereof (the "Conversion Right"), when exercisable, into shares of Common Stock as provided in this Section 1.5. Upon exercise of the Conversion Right with respect to a particular number of shares subject to this Warrant (the "Converted Warrant Shares"), the Company shall deliver to the Holder (without payment by the Holder of any Exercise Price or any cash or other consideration) that number of shares of fully paid and nonassessable Common Stock equal to the quotient obtained by dividing (X) the value of this Warrant (or the specified portion hereof) on the Conversion Date (as defined in subsection (b) hereof), which value shall be determined by subtracting (A) the aggregate Exercise Price of the Converted Warrant Shares immediately prior to the exercise of the Conversion Right from (B) the aggregate fair market value of the Converted Warrant Shares issuable upon exercise of this Warrant (or the specified portion hereof) on the Conversion Date by (Y) the fair market value of one share of Common Stock on the Conversion Date for which the Warrant is exercised.

Expressed as a formula, such conversion shall be computed as follows:

$$N = \frac{B-A}{Y}$$

where: N = the number of shares of Common Stock that may be issued to Holder

Y = the fair market value (FMV) of one share of such Common Stock

A = the aggregate Warrant Price (Converted Warrant Shares x Exercise Price)

B = the aggregate FMV (i.e., FMV x Converted Warrant Shares)

No fractional shares shall be issuable upon exercise of the Conversion Right, and, if the number of shares to be issued determined in accordance with the foregoing formula is other than a whole number, the Company shall pay to the Holder an amount in cash equal to the fair market value of the resulting fractional share of the Conversion Date.

(b) Method of Exercise. The Conversion Right may be exercised by the Holder by the surrender of this Warrant, when exercisable, at the principal office of the Company together with the Purchase Form in the form attached hereto duly completed and executed and indicating the number of shares subject to this Warrant which are being surrendered (referred to in Section 1.5(a) hereof as the Converted Warrant Shares) in exercise of the Conversion Right. Such conversion shall be effective upon receipt by the Company of this Warrant together with the aforesaid written statement, or on such later date as is specified therein (the "Conversion Date"), and, at the election of the Holder hereof, may be made contingent upon the occurrence of any of the events specified in Section 2. Certificates for the shares issuable upon exercise of the Conversion Right and, if applicable, a new Warrant evidencing the balance of the shares remaining subject to this Warrant, shall be issued as of the Conversion Date and shall be delivered to the Holder within thirty (30) days following the Conversion Date.

(c) Determination of Fair Market Value. For purposes of this Section 1.5, "fair market value" of a share of Common Stock as of a particular date (the "Determination Date") shall mean:

(i) If the Conversion Right is exercised in connection with and contingent upon a public offering, and if the Company's Registration Statement relating to such public offering ("Registration Statement") has been declared effective by the Securities and Exchange Commission, then the initial "Price to Public" of a share of Common Stock specified in the final prospectus with respect to such offering.

(ii) If the Conversion Right is not exercised in connection with and contingent upon a public offering, then as follows:

(1) if traded on a securities exchange, the fair market value of the Common Stock shall be deemed to be the average of the closing prices of the Common Stock on such exchange over the five-day period ending one business day prior to the Determination Date or, if less, such number of days as the Common Stock has been traded on such exchange;

(2) if traded over-the-counter, the fair market value of the Common Stock shall be deemed to be the average of the closing bid prices of the Common Stock over the five-day period ending one business day prior to the Determination Date or, if less, such number of days as the Common Stock has been traded over-the-counter; and

(3) if there is no public market for the Company's Common Stock, then fair market value of a share of such Common Stock shall be determined in good faith by the Board of Directors of the Company.

2. **CERTAIN ADJUSTMENTS.**

2.1. Changes in Common Stock. If the Company shall (i) combine the outstanding shares of Common Stock into a lesser number of shares, (ii) subdivide the outstanding shares of Common Stock into a greater number of shares, or (iii) issue additional shares of Common Stock as a dividend or other distribution with respect to the Common Stock, the number of shares of Common Stock to be issued pursuant to the terms of this Warrant shall be equal to the number of shares which the Holder would have been entitled to receive after the happening of any of the events described above if such shares had been issued immediately prior to the happening of such event, such adjustment to become effective concurrently with the effectiveness of such event. The Exercise Price in effect immediately prior to any such combination of Common Stock shall, upon the effectiveness of such combination, be proportionately increased. The Exercise Price in effect immediately prior to any such subdivision of Common Stock or at the record date of such dividend shall upon the effectiveness of such subdivision or immediately after the record date of such dividend be proportionately reduced.

2.2. Reorganizations and Reclassifications. If there shall occur any capital reorganization or reclassification of its Common Stock (other than a change in par value or a subdivision or combination as provided for in Section 2.1), then, as part of any such reorganization or reclassification, lawful provision shall be made so that the Holder shall have the right thereafter to receive upon the exercise hereof the kind and amount of shares of stock or other securities or property which such Holder would have been entitled to receive if, immediately prior to any such reorganization or reclassification, such Holder had held the number of shares of Common Stock which were then purchasable upon the exercise of this Warrant. In any such case, appropriate adjustment (as reasonably determined by the Board of Directors of the Company) shall be made in the application of the provisions set forth herein with respect to the rights and interests thereafter of the Holder such that the provisions set forth in this Section 2 (including provisions with respect to adjustment of the Exercise Price) shall thereafter be applicable, as nearly as is reasonably practicable, in relation to any shares of stock or other securities or property thereafter deliverable upon the exercise of this Warrant.

2.3. Merger, Consolidation or Sale of Assets. Subject to the provisions of this Section 2, if there shall be a merger or consolidation of the Company with or into another corporation (other than a merger or reorganization involving only a change in the state of incorporation of the Company or the acquisition by the Company of other businesses where the Company survives as a going concern), or the sale of all or substantially all of the Company's capital stock or assets to any other person, then as a part of such transaction, provision shall be made so that the Holder shall thereafter be entitled to receive the number of shares of stock or other securities or property of the Company, or of the successor corporation resulting from the merger, consolidation or sale, to which the Holder would have been entitled if the Holder had exercised its rights pursuant to the Warrant immediately prior thereto. In any such case, appropriate adjustment shall be made in the application of the provisions of this Section 2 to the end that the provisions of this Section 2 shall be applicable after that event in as nearly equivalent a manner as may be practicable. Upon the closing of any transaction pursuant to this Section 2.3, this Warrant shall terminate. The Company shall provide the Holder with at least five (5) days' written notice prior to closing thereof of the terms and conditions of any transaction or transactions contemplated by this Section 2.3 (to the extent the Company has notice thereof).

2.4. Statement of Adjustment. Whenever the Exercise Price or the Common Stock to be issued hereunder shall be adjusted as provided in this Section 2, the Company shall forthwith file with the Secretary of the Company or at such other place as shall be designated by the Company, a statement, signed by its chief financial officer, showing in detail the facts requiring such adjustment, the Exercise Price in effect before and after such adjustment and the kind and amount of shares of capital stock, securities or other property thereafter to be received upon the exercise of this Warrant.

3. **Reservation of Stock. The Company will, at the time this Warrant becomes exercisable, reserve and keep available such shares of Common Stock necessary for full exercise hereof.**

4. **Replacement of Warrants. Upon receipt of evidence reasonably satisfactory to the Company of the loss, theft, destruction or mutilation of this Warrant and (in the case of loss, theft or destruction) upon delivery of an indemnity agreement (with surety if reasonably required) in an amount reasonably satisfactory to the Company, or (in the case of mutilation) upon surrender and cancellation of this Warrant, the Company will issue, in lieu thereof, a new Warrant of like tenor.**

5. **Transferability. Subject to compliance with applicable federal and state securities laws, this Warrant and all rights hereunder are transferable in whole or in part by the Holder to any person or entity upon written notice to the Company. The transfer shall be recorded on the books of the Company upon the surrender of this Warrant, properly endorsed, to the Company at its principal offices, and the payment to the Holder of all transfer taxes and other governmental charges imposed on such transfer. In the event of a partial transfer, the Company shall issue to the holders one or more appropriate new warrants.**

6. <u>No Impairment</u>. The Company will not, by amendment of its certificate of incorporation or through any reorganization, transfer of assets, consolidation, merger, dissolution, or any other similar voluntary action, avoid or seek to avoid the observance or performance of any of the terms of this Warrant, but will at all times in good faith assist in the carrying out of all such terms and in the taking of all such action as may be necessary or appropriate in order to protect the rights of the holder of the Warrant against impairment due to such event. Without limiting the generality of the foregoing, the Company (a) will not increase the value assigned to any shares of Common Stock receivable on the exercise of the Warrant above the amount payable therefor on such exercise, (b) will take all action that may be necessary or appropriate in order that the Company may validly and legally issue fully paid and nonassessable shares of stock, free from all taxes, liens and charges with respect to the issue thereof, on the exercise of all of the Warrants from time to time outstanding, and (c) will not consolidate with or merge into any other person or permit any such person to consolidate with or merge into the Company (if the Company is not the surviving person), unless such other person shall expressly assume in writing and will be bound by all the terms of this Warrant.

7. <u>Notices</u>. Any notice, request, communication or other document required or permitted to be given or delivered to the holder hereof or the Company shall be delivered, or shall be sent by certified or registered mail, postage prepaid, to each such holder at its address as shown on the books of the Company or to the Company at the address indicated therefor on the signature page of this Warrant.

8. <u>Waivers and Modifications</u>. Any term or provision of this Warrant may be amended or modified, and any term or provision hereof may be waived (either generally or in a particular instance and either retroactively or prospectively) with the written consent of the Company and the Holder. No waivers of any term, condition or provision of this Warrant, in any one or more instances, shall be deemed to be, or construed as, a further or continuing waiver of any such term, condition or provision.

9. <u>Headings</u>. The headings in this Warrant are for convenience of reference only and shall in no way modify or affect the meaning or construction of any of the terms or provisions of this Warrant.

10. <u>Governing Law</u>. This Warrant will be governed by and construed in accordance with and governed by the laws of the State of Delaware, without giving effect to the conflict of law principles thereof.

I**N WITNESS WHEREOF**, Celsion Corporation caused this Warrant to be executed by an officer thereunto duly authorized.

CELSION CORPORATION

By: ____________________
Name:
Title:

Address:

997 Lenox Drive
Suite 100
Lawrenceville, NJ 0864

EXHIBIT A

PURCHASE FORM

To: **CELSION CORPORATION**
997 Lenox Drive, Suite 100
Lawrenceville, NJ 0864

The undersigned pursuant to the provisions set forth in the attached Warrant No. 2019-001, hereby irrevocably elects to (check one):

_____ (A) purchase ________ shares of Common Stock, par value $0.01 per share, of Celsion Corporation (the "Common Stock"), covered by such Warrant and herewith makes payment of $________, representing the full exercise price for such shares at the price per share provided for in such Warrant; or

_____ (B) convert ________ Converted Warrant Shares into that number of shares of fully paid and nonassessable shares of Common Stock, determined pursuant to the provisions of Section 1.5 of the Warrant.

The shares of Common Stock for which the Warrant may be exercised or converted shall be known herein as the "Warrant Stock."

The undersigned is aware that the Warrant Stock has not been and will not be registered under the Securities Act of 1933, as amended (the "Securities Act") or any state securities laws. The undersigned understands that reliance by the Company on exemptions under the Securities Act is predicated in part upon the truth and accuracy of the statements of the undersigned in this Purchase Form.

The undersigned represents and warrants that (1) it has been furnished with all information which it deems necessary to evaluate the merits and risks of the purchase of the Warrant Stock, (2) it has had the opportunity to ask questions concerning the Warrant Stock and the Company and all questions posed have been answered to its satisfaction, (3) it has been given the opportunity to obtain any additional information it deems necessary to verify the accuracy of any information obtained concerning the Warrant Stock and the Company and (4) it has such knowledge and experience in financial and business matters that it is able to evaluate the merits and risks of purchasing the Warrant Stock and to make an informed investment decision relating thereto.

The undersigned hereby represents and warrant that it is purchasing the Warrant Stock for its own account for investment and not with a view to the sale or distribution of all or any part of the Warrant Stock.

The undersigned understands that because the Warrant Stock has not been registered under the Securities Act, it must continue to bear the economic risk of the investment for an indefinite period of time and the Warrant Stock cannot be sold unless it is subsequently registered under applicable federal and state securities laws or an exemption from such registration is available.

The undersigned agrees that it will in no event sell or distribute or otherwise dispose of all or any part of the Warrant Stock unless (1) there is an effective registration statement under the Securities Act and applicable state securities laws covering any such transaction involving the Warrant Stock, or (2) the Company receives an opinion satisfactory to the Company of the undersigned's legal counsel stating that such transaction is exempt from registration. The undersigned consents to the placing of a legend on its certificate for the Warrant Stock stating that the Warrant Stock has not been registered and setting forth the restriction on transfer contemplated hereby and to the placing of a stop transfer order on the books of the Company and with any transfer agents against the Warrant Stock until the Warrant Stock may be legally resold or distributed without restriction.

The undersigned has considered the federal and state income tax implications of the exercise of the Warrant and the purchase and subsequent sale of the Warrant Stock.

By: ____

Date: ____

SECOND AMENDMENT TO LEASE

THIS SECOND AMENDMENT TO LEASE ("Second Amendment") dated January 9, 2019 between **LENOX DRIVE OFFICE PARK, LLC**, a Delaware limited liability company with an office at c/o JFR Global, 2329 Nostrand Avenue, Suite 200, Brooklyn, New York 1 1210, successor in interest to Brandywine Operating Partnership, L.P. ("Landlord") and **CELSION CORPORATION,** a Delaware Corporation limited liability company having an address at 997 Lenox Drive, Suite 1 00, Lawrenceville, New Jersey 08648 ("Tenant").

RECITALS:

WHEREAS, pursuant to a certain Lease dated July 14, 2011 (the **"Original Lease"**), Tenant leased an agreed upon 10,870 rentable square feet ("rsf") of space on the first floor of the office building located at 997 Lenox Drive, Lawrenceville, New Jersey (the "Building"), and

WHEREAS, pursuant to a First Amendment to Lease dated April, 2017, Landlord and Tenant agreed to a reduction in the square footage resulting in a leased premises comprised of an agreed upon 7,565 rsf (the "Existing Premises") and to an extension of the term of the Original Lease; the Original Lease and the First Amendment to Lease shall be collectively referred to as the "Lease"; and

WHEREAS, Landlord and Tenant now wish to (i) increase the size of the Existing Premises to add additional rentable square feet in the amount 2,285 rsf (the "Expansion Premises") which is adjacent to the Existing Premises on the first (l st) floor of the Building; (ii) extend the term of the Lease as amended by this Second Amendment for an additional twelve (12) month period calculated from the current expiration date of the Lease, and (iii) implement such other terms and provisions as agreed to by the parties hereto; and

WHEREAS, Landlord and Tenant mutually agree in this Second Amendment to implement the terms of the expansion and extension as well as to make such other modifications as are herein agreed in order to accomplish and complement the foregoing, all as set forth herein below.

NOW, THEREFORE, in consideration of the premises and mutual covenants hereinafter contained, the receipt and sufficiency of which are hereby acknowledged, Landlord and Tenant hereby agree as follows:

1. **Incorporation of Recitals; Capitalized Terms.** The recitals set forth above, the Lease, and the exhibits attached thereto are hereby incorporated by reference into this Second Amendment. For sake of clarity any reference in the Lease to the Building, Premises, Term, and Landlord shall mean references to those terms identified in this Second Amendment. For purposes of this Second Amendment, except where the context otherwise requires, the Second Amendment, First Amendment and the Original Lease shall be referred to collectively from time to time as the "Lease as Amended."

2. **Demised Premises**. Landlord and Tenant agree that effective February l, 2019 the premises leased by Tenant shall be comprised of the Existing Premises and Expansion Premises for a total demised premises of 9,850 rsf (the "Demised Premises"). A floor plan showing the Demised Premises (which identifies Expansion Premises and the Existing Premises) is attached hereto and incorporated herein as Schedule A. The parties agree that the Demised Premises shall be referred to as Suite 104 and the Expansion Premises and the Existing Premises shall be deemed one integrated unit

3. **Commencement Date/Term/Expiration Date**. The parties agree that the Commencement Date applicable to the Lease as Amended shall be February l, 2019 (the **"Commencement Date"**). The parties further agree that the term for the Demised Premises shall be extended by twelve (12) months and as result the Expiration Date for the Lease as Amended shall be August 31, 2023 (the **"Expiration Date"**). From the date hereof until February l, 2019, the Lease shall continue unchanged with respect to the Existing Premises.

4. **Fixed Basic Rent**. From the Commencement Date through the Expiration Date the Fixed Basic Rent and the per rentable square foot rental rate for the Demised Premises shall be payable in accordance with the table below and shall be based on 9,850 rsf. There shall be a five

(5) month Fixed Basic Rent abatement calculated on the Expansion Space which shall total $29,228.96 and shall be applied as follows:

Lease Year	Per RSF	Annual Rent	Monthly Rate
2/1/2019-4/30/2019	$ 30.50	$ 57,683,13*	$ 25,035.42
5/1/2019-4/30/2020	$ 31.00	$ 293,544,1 3*	$ 25,445.83
5/1 /2020-4/30/2021	$ 31.50	$ 310,275.00	$ 25,856.25
5/1/2021-4/30/2022	$ 32.00	$ 3 15,200.00	$ 26,266.67
5/1/20224/31/2023	$ 32.50	$ 320,125.00	$ 26,667.08
5/1/2023 - 8/3 1/2023	$ 33.00	$ 108,350.00	$ 27,087.50

*after reduction of a $17,423.12 abatement applied to the Fixed Basic Rent due 2/1/2019 and the payment due on 2/1/2019 shall be $7,612.30.

** after reduction of a $1 1,805.83 applied to the Fixed Basic Rent due 5/1/2019 and the payment due on 5/1/2019 shall be $13,640.00.

All terms and conditions of the Lease with respect to manner and time of payment shall continue without change and shall apply to the Demised Premises and to the Lease as Amended.

5. **Additional Rent/Utilities/Base Year/ Tenant's Percentage**. Tenant shall continue to pay Additional Rent, Operating Expenses, and Utilities in the same manner as presently paid pursuant to the Lease except as set forth herein which shall be applicable after the Commencement Date. Electricity shall be charged at the rate of the greater of $1.75 per rentable square foot or the adjusted rate as described in Section 5 of the Lease. Tenant's Percentage as described in Section 4 (A) of the Lease for the Demised Premises shall be 10.13%. Tenant's Base Year shall remain Calendar Year 2017.

6. **Acceptance of Premises/Additional Work**. Tenant accepts the Expansion Premises in its "As Is Where Is" condition and Landlord shall have not obligation to perform any tenant improvements to the Expansion Premises or the Demised Premises. Tenant has hired the services of Vision RE Construction Company LLC to perform improvement work within the Expansion Premises. Such work shall be performed pursuant to a construction or service contract which shall be subject to Landlord's reasonable approval as it relates to materials and specifications.

7. **Right of Termination**. Landlord and Tenant hereby agree that Tenant's right of termination as set forth in Section 7 of the First Amendment shall continue in full force and effect subject to the following changes. The date by which the Cancellation Notice must be served shall be August 31, 2020 and the Cancellation Date shall be August 31, 2021. The Cancellation Fee shall be calculated in the same manner as described in Section 7 (which for sake of clarity shall encompass and include all "Landlord's Costs" as defined in Section 7 which are incurred or granted in this Second Amendment), except that in calculating the unamortized portion the reference shall be to the Expiration Date of August 31, 2023.

8. **Broker**. Tenant and Landlord mutually represent and wan•ants to each other Landlord that except for Landlord's broker which is Newmark Knight Frank and Tenant's Broker which is Cresa (collectively the "**Broker"**) no other broker or real estate agent was engaged or employed in connection with this Second Amendment. Each party hereby indemnifies and holds the other harmless from and against any and all costs, claims, losses, liabilities and expenses (including, without limitation, reasonable attorneys' fees and disbursements) arising out of any breach of the foregoing representation. Landlord shall pay each Broker a commission in accordance with their respective separate agreements

9. **Security Deposit**. The parties hereby confirm that Landlord is holding a Cash Security Deposit $50,000.00. The Security Deposit shall secure the obligations of Tenant under the Lease as Amended and shall apply to the Demised Premises.

10. **Ratification**. Tenant confirms and ratifies that, as of the date hereof: (a) Tenant is the Tenant under the Lease and has neither assigned the Lease as Amended nor subleased any portion of the Premises; (b) the Lease as Amended is and remains in good standing and in full force and effect; (c) Landlord is not in default of any of its obligations under the Lease as Amended nor, to Tenant's knowledge, has any event occurred which, with the giving of notice of the passage of time or both would constitute a default by Landlord under the Lease as Amended; and (d) Tenant

11. **Binding Effect/Governing Law**. Except as modified hereby, the Lease shall remain in full force and effect, and shall be binding upon Landlord and Tenant and their respective successors and assigns. This Second Amendment shall be governed by the laws of the State of New Jersey.

12. **Conflicts.** If any inconsistency exists or arises between the terms of this Second Amendment and the terms of the Lease, the terms of this Second Amendment shall prevail.

13. **Counterparts.** This Second Amendment may be executed in multiple counterparts, each of which shall constitute an original, but all of which shall constitute one and the same document. Signatures transmitted via facsimile or e-mail shall have the same binding effect as original signatures. Promptly following any facsimile transmittal or e-mail transmittal of signatures in "PDF" format, the parties shall deliver to each other the original executed document (it being agreed and understood that the delivery of such original shall not be a condition to the binding nature of the facsimile or electronic copy of the document).

14. **Continuation of Lease**. Except as set forth above, the Lease shall continue in full force and effect in accordance with its terms subject to the following modifications which shall govern from and after the Commencement Date.

15. **Confidentiality.** The terms of this Second Amendment shall remain confidential and shall not be released to any third party except as otherwise provided herein and as required by law. Nothing contained herein shall prohibit the parties hereto from releasing the terms of this Second Amendment to their attorneys and/or other professionals, investors, lenders and potential purchasers of the property. Except for public announcements that may be required by law, all public announcements with the use of Tenant's name shall be subject to Tenant's prior written consent, which may be withheld in Tenant's sole discretion.

No Further text on this page; signature element on next page

IN WITNESS WHEREOF, the parties hereto have executed this Second Amendment as of the date and year first above written.

LANDLORD:

LENOX DRIVE OFFICE PARK, LLC

By: ____________________
Name: ____________________
Title: ____________________

TENANT:

CELSION CORPORATION

By: ____________________
Name: Jeffrey W. Church
Title: Senior Vice President and CFO

Exhibit 31.1

CELSION CORPORATION
CERTIFICATION

I, Michael H. Tardugno, certify that:

1. I have reviewed this quarterly report on Form 10-Q of Celsion Corporation;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)), and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15 (f)), for the registrant and have:

   (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

   (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Celsion Corporation

May 15, 2019

By: */s/ Michael H. Tardugno*
Michael H. Tardugno
Chairman, President and Chief Executive Officer

Exhibit 31.2

CELSION CORPORATION
CERTIFICATION

I, Jeffrey W. Church, certify that:

1. I have reviewed this quarterly report on Form 10-Q of Celsion Corporation;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)), and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15 (f)), for the registrant and have:

   (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

   (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Celsion Corporation

May 15, 2019

By: */s/ Jeffrey W. Church*
Jeffrey W. Church
Executive Vice President and Chief
Financial Officer

Exhibit 32.1

CELSION CORPORATION
SECTION 1350 CERTIFICATIONS*

Pursuant to the requirement set forth in Rule 13a-14(b) of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), and Section 1350 of Chapter 63 of Title 18 of the United States Code (18 U.S.C. §1350), each of the undersigned hereby certifies that, to the best of his knowledge, (i) the Quarterly Report on Form 10-Q for the period ended March 31, 2019 of Celsion Corporation (the "Company") filed with the Securities and Exchange Commission on the date hereof fully complies with the requirements of Section 13(a) or 15(d) of the Exchange Act and (ii) the information contained in such report fairly presents, in all material respects, the financial condition and results of operations of the Company.

May 15, 2019	By:	*/s/ Michael H. Tardugno*
		Michael H. Tardugno
		Chairman, President and Chief Executive Officer
May 15, 2019	By:	*/s/ Jeffrey W. Church*
		Jeffrey W. Church
		Executive Vice President and Chief Financial Officer

* This certification accompanies the Form 10-Q to which it relates, is not deemed filed with the Securities and Exchange Commission and is not to be incorporated by reference into any filing of the Company under the Securities Act of 1933, as amended, or the Exchange Act (whether made before or after the date of the Form 10-Q), irrespective of any general incorporation language contained in such filing.